COURSE OUTLINE

BIM200 Blood Banking and Transfusion Sciences

School: School of Health - Biomedicine

2026 | Trimester 2

UniSC Sunshine Coast | BLENDED LEARNING | Most of your course is on campus but you may be able to do some components of this course online.

Please go to unisc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

In this course you will study blood group antigen and antibody systems, their interactions and how they relate to the clinical practice of blood transfusion. Building on your knowledge of haematology, you will learn the theory and develop competencies in laboratory techniques including the ABO, Rh and other blood group systems; donor screening, blood collection, preparation and use; blood grouping, antibody screening, cross-matching; problems associated with pregnancy; the risk and benefits of transfusions, strategies to investigate adverse effects of transfusions and tissue-typing.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Fully independent asynchronous learning	1.5hrs	Week 1	12 times
Tutorial/Workshop 1 – On campus tutorial to discuss case based application of blood banking and transfusion concepts.	2hrs	Week 2	6 times
Laboratory 1 – On campus laboratories to develop competencies in blood banking techniques and investigation of transfusion cases.	3hrs	Week 1	12 times

1.3. Course Topics

Blood banking immunology and genetics
ABO & Rh blood group systems;
Other blood group systems;
Pre-transfusion & compatibility testing;
Blood products and their use
Transfusion in clinical practice
Haemolytic disease of the newborn
Adverse transfusion reactions
Hemovigilance
Patient blood management
Blood donation, processing and testing
Apheresis in transfusion practice
Transfusion transmitted diseases
The HLA system and transplantation
Molecular immunohaematology – red cell genotyping
Neutrophil (HNA) & Platelet (HPA) antigens and antibodies in transfusion practice

2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...	GRADUATE QUALITIES MAPPING Completing these tasks successfully will contribute to you becoming...	PROFESSIONAL STANDARD MAPPING * Australian Institute of Medical and Clinical Scientists
1 Explain, describe, analyse and interpret antigen antibody interactions as they relate to blood banking and transfusion sciences and transplantation disorders	Knowledgeable Creative and critical thinker Empowered Engaged Communication Problem solving Organisation Applying technologies Information literacy	1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.2.1, 1.2.2, 1.2.3, 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.6.7, 2, 2.1.1, 2.1.2, 2.2.1, 2.3.1, 2.3.2, 3.2.1, 3.3.1, 3.3.2, 3.3.3, 4, 4.1.3, 5.1.2, 5.1.5, 5.2.1, 5.3.3, 5.3.4, 5.3.9, 5.4.1, 6.2.4, 6.5.3, 6.5.4, 6.5.7, 7, 7.1.2, 7.3.2, 7.4.1
2 Investigate and analyse clinical issues in blood banking and transfusion sciences and their link to the local and global community	Knowledgeable Creative and critical thinker Ethical Engaged Sustainability-focussed Communication Collaboration Problem solving Organisation Applying technologies Information literacy	1.1, 1.2, 1.4, 1.5, 2.3, 3.1, 3.3, 5.2, 5.3, 5.4, 7.1, 7.3, 7.4, 10.3, 10.4
3 Demonstrate an understanding of the professional and ethical responsibilities inherent in blood transfusion and tissue transplantation in clinical practice.	Knowledgeable Creative and critical thinker Empowered Ethical Engaged Sustainability-focussed Communication Collaboration Problem solving Organisation Information literacy	2, 4.1, 4.2, 5.1, 5.2, 5.3, 6.2, 6.3, 6.4, 6.5, 7.1, 7.2, 7.3
4 Understand the stages and challenges to providing an adequate blood supply, including blood donors, blood donation, blood collection and processing, the range of blood and blood products and how each is used.	Knowledgeable Empowered Ethical Sustainability-focussed Collaboration Problem solving Organisation Applying technologies Information literacy	4.1, 6.2, 6.4, 8.2, 8.3, 8.4

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN INSTITUTE OF MEDICAL AND CLINICAL SCIENTISTS	
1.1.1	Ensure the appropriateness of sample collection procedures: Correct request form is received as set out in established protocol.
1.1.2	Ensure the appropriateness of sample collection procedures: Identification of patient and demographic information is established.
1.1.3	Ensure the appropriateness of sample collection procedures: Appropriate action is taken when request appears inconsistent with patient information data.

CODE	COMPETENCY
1.1.4	Ensure the appropriateness of sample collection procedures: Patient preparation and specimen collection is consistent with test(s) requested.
1.2.1	Ensure the appropriateness of specimen reception procedures: Documentation is checked to ensure it matches specimen and complies with current regulations.
1.2.2	Ensure the appropriateness of specimen reception procedures: Collection errors are identified and corrective action taken.
1.2.3	Ensure the appropriateness of specimen reception procedures: Specimen suitability for further processing is established.
1.3.1	Evaluate specimen suitability prior to analysis: Correct and satisfactory labelling and matching of subject details is established.
1.3.2	Evaluate specimen suitability prior to analysis: Confirmation is made that the nature of the specimen is consistent with requested analysis.
1.3.3	Evaluate specimen suitability prior to analysis: Specimen is received in correct container (i.e., containing correct anticoagulant or fixative if appropriate) and in accordance with collection and delivery protocols.
1.3.4	Evaluate specimen suitability prior to analysis: Quality of specimen meets defined acceptability criteria.
1.3.5	Evaluate specimen suitability prior to analysis: Appropriate action, as per defined criteria, is taken upon receipt of an unsuitable specimen.
1.6.1	Read and validate results - Equipment based testing: Laboratory instrumentation is operated within established procedures (including quality control, troubleshooting instrument problems and performing preventative and corrective maintenance).
1.6.2	Read and validate results - Equipment based testing: Validity of test results is confirmed in terms of protocols (including standards, quality control data and performance of analytical systems) and problems are identified and remedied or notified to the appropriate staff member.
1.6.3	Read and validate results - Equipment based testing: Results are calculated from data outputs according to documented procedures.
1.6.4	Read and validate results - Equipment based testing: Test data, calculations, results and acceptance/rejection of analytical procedure outcome are documented.
1.6.7	Read and validate results - Observation based testing: Critical observations are made and recorded.
1.1	Collection, preparation and analysis of clinical material: Ensure the appropriateness of sample collection procedures
1.2	Collection, preparation and analysis of clinical material: Ensure the appropriateness of specimen reception procedures
1.4	Collection, preparation and analysis of clinical material: Determine the priority of laboratory requests (triage) to effectively manage service requirements
1.5	Collection, preparation and analysis of clinical material: Process specimen utilising appropriate techniques
2	Correlation and validation of results of investigations using knowledge of method(s) including analytical principles and clinical information
2.1.1	Assess validity of data/results against possible range of outcomes: Initial observation and limited interpretation for significance of the raw data/results is undertaken.
2.1.2	Assess validity of data/results against possible range of outcomes: Implausible results, results inconsistent with clinical information or expected outcomes based on other test results or those outside defined criteria are investigated further using defined troubleshooting strategies.
2.2.1	Validation of results: Possible causes for implausible or inconsistent results or outcomes are determined.
2.3.1	Make decisions about reporting results, repeating procedures, consulting senior staff and carrying out further tests within established guidelines: Appropriate decisions about repeating procedures, carrying out further tests within established guidelines, rejection or reporting of results are made. Senior staff are appropriately consulted.
2.3.2	Make decisions about reporting results, repeating procedures, consulting senior staff and carrying out further tests within established guidelines: Rejected results are dealt with appropriately.

CODE	COMPETENCY
2.3	Correlation and validation of results of investigations using knowledge of method(s) including analytical principles and clinical information: Make decisions about reporting results, repeating procedures, consulting senior staff and carrying out further tests within established guidelines
3.2.1	Use the administrative systems in place to communicate the results: Results are communicated in a timely manner and according to laboratory protocols.
3.3.1	Ensure that results with important diagnostic or treatment implications are communicated as per established protocols: Significant results, as defined by the laboratory, are identified
3.3.2	Ensure that results with important diagnostic or treatment implications are communicated as per established protocols: Results are interpreted in the light of clinical information provided and knowledge of the test(s) and limitations.
3.3.3	Ensure that results with important diagnostic or treatment implications are communicated as per established protocols: Urgent or significant results are communicated to appropriate personnel so they understand the significance, purpose of the communication and action required. This action is documented.
3.1	Interpretation, reporting and issuing of laboratory results: Verify report(s) with sample identification
3.3	Interpretation, reporting and issuing of laboratory results: Ensure that results with important diagnostic or treatment implications are communicated as per established protocols
4	Maintenance of documentation, equipment, resources and stock
4.1.3	Coordinate supplies of stocks and reagents: Expired or dangerous materials are disposed of according to regulations.
4.1	Maintenance of documentation, equipment, resources and stock: Coordinate supplies of stocks and reagents
4.2	Maintenance of documentation, equipment, resources and stock: Participate in maintenance of the laboratory and equipment
5.1.2	Prepare and store reagents and solutions: Reagents are labelled according to legislative guidelines.
5.1.5	Prepare and store reagents and solutions: Reagents are handled as required by regulatory guidelines.
5.2.1	Identify and respond to unsafe work practices and breaches of regulations: All safe work practices (as laid down by legislative guidelines) are understood and promoted.
5.3.3	Ensure correct procedures are followed for acquisition, collection, storage, transportation and disposal of biological, chemical, toxic and radioactive wastes: The disposal of biological, chemical, toxic and radioactive material is performed as per current legislation and guidelines.
5.3.4	Ensure correct procedures are followed for acquisition, collection, storage, transportation and disposal of biological, chemical, toxic and radioactive wastes: Protocols for incidents such as spills of biological, chemical, toxic and radioactive substances are followed in accordance with current regulations and guidelines.
5.3.9	Ensure correct procedures are followed for acquisition, collection, storage, transportation and disposal of biological, chemical, toxic and radioactive wastes: Laboratory workplace safety requirements are met when handling biological, chemical, toxic or radioactive substances.
5.4.1	Respond appropriately to emergency situations: Appropriate safety equipment and personal protective equipment (PPE) is available and used according to documented protocols.
5.1	Maintenance and promotion of safe working practices: Prepare and store reagents and solutions
5.2	Maintenance and promotion of safe working practices: Identify and respond to unsafe work practices and breaches of regulations
5.3	Maintenance and promotion of safe working practices: Ensure correct procedures are followed for acquisition, collection, storage, transportation and disposal of biological, chemical, toxic and radioactive wastes
5.4	Maintenance and promotion of safe working practices: Respond appropriately to emergency situations
6.2.4	Maintain and update scientific/technical knowledge and skills: Opportunities to enhance learning from investigation of unusual clinical cases and/or results are pursued.
6.5.3	Complies with profession's code of ethics: Practices detrimental to patients and others are avoided.

CODE	COMPETENCY
6.5.4	Complies with profession's code of ethics: Confidential information gained in a professional capacity is not disclosed to unauthorised persons.
6.5.7	Complies with profession's code of ethics: A responsible approach to the community and the environment with respect to the handling and disposal of hazardous materials is maintained.
6.2	Professional accountability and participation in continuing professional development: Maintain and update scientific/technical knowledge and skills
6.3	Professional accountability and participation in continuing professional development: Develop skills relevant to the enhancement of professional growth
6.4	Professional accountability and participation in continuing professional development: Recognises own abilities and level of professional competence
6.5	Professional accountability and participation in continuing professional development: Complies with profession's code of ethics
7	Responsibility for professional practice including test selection, development and use of laboratory investigations
7.1.2	Accepts responsibility for own actions/omissions: Tasks are checked to ensure they are completed.
7.3.2	Demonstrates knowledge of contemporary ethical issues impinging on Medical Science: Rights of individuals/groups are recognised and protected.
7.4.1	Knowledge of new tests and their potential in the laboratory: Ongoing review of current literature for information on new or improved tests or procedures is performed.
7.1	Responsibility for professional practice including test selection, development and use of laboratory investigations: Accepts responsibility for own actions/omissions
7.2	Responsibility for professional practice including test selection, development and use of laboratory investigations: Makes independent, professional judgements
7.3	Responsibility for professional practice including test selection, development and use of laboratory investigations: Demonstrates knowledge of contemporary ethical issues impinging on Medical Science
7.4	Responsibility for professional practice including test selection, development and use of laboratory investigations: Knowledge of new tests and their potential in the laboratory
8.2	Liaison with health workers and others to continuously improve the service: Continually review laboratory processes and testing to streamline, minimise waste and increase efficiency
8.3	Liaison with health workers and others to continuously improve the service: Establish and maintain relationships with suppliers
8.4	Liaison with health workers and others to continuously improve the service: Establish and maintain relationships with service users
10.3	Contribution to advancement of knowledge and improvement of laboratory practice: Evaluate results and the need for further experimental work
10.4	Contribute to planning and design of research and development projects: Prepare and deliver report

5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1. Pre-requisites

LFS112 and (MLS100 or MLS110) and enrolled in Program UB001 or SC355 or SC357

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

5.5. Microcredential Information

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

There will be quizzes on even weeks to assess your comprehension of the key theoretical, practical, and clinical concepts covered thus far. Feedback on these concepts and the quiz will take place in the subsequent tutorial .

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1a	Quiz/zes	Individual	30%	20 to 30 minutes	Refer to Format	In Class
All	1b	Examination - Centrally Scheduled	Individual	20%	120min + 10min perusal	Exam Period	Exam Venue
All	2	Literature Review (or component)	Individual	20%	1500 - 2000 words and 10-15min interview	Week 9	Online Assignment Submission with plagiarism check
All	3	Practical / Laboratory Skills	Individual	30%	150 min + 10 min perusal	Week 12	In Class

All - Assessment Task 1a: BIM200 Intra trimester review quizzes (30%)

GOAL:	To demonstrate your understanding of key theoretical, practical, and clinical concepts covered in weeks 1-12 of the course
PRODUCT:	Quiz/zes
AUTHORSHIP STATEMENT:	
FORMAT:	The quizzes will take place in the scheduled lab class on weeks 2,4,6,8 &10. The quiz will consists of multi choice questions, short answer questions and case studies and be worth 30%.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Technical & clinical concepts — 1 2 4 2 Explanation & interpretation — 1 2 3 3 Identification of ethical & sustainable practices — 2 3 4
GENERIC SKILLS:	Problem solving, Organisation, Applying technologies, Information literacy

All - Assessment Task 1b: BIM200 Final theory exam (20%)

GOAL:	To demonstrate understanding and the ability to apply key theoretical, practical, and clinical concepts covered in weeks 1-12 of the course.
PRODUCT:	Examination - Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	Task 1b is a centrally scheduled invigilated exam that will take place on campus. It will consist of case studies, multi choice questions and short answer questions.

CRITERIA:

No.		Learning Outcome assessed
1	Technical & clinical concepts	1 2
2	Explanation & interpretation	1 2 3 4
3	Identification of ethical & sustainable practices	2 3 4

GENERIC SKILLS:	Problem solving, Organisation, Applying technologies

All - Assessment Task 2: BIM200 Research Study Assignment (20%)

GOAL:	To develop the student's ability (i) to search for high quality, relevant and current scientific information and (ii) to organise and apply the knowledge and understanding gathered into a coherant scientific written product. To assess the student's comprehension, application and articulation of their new transfusion science knowledge.
PRODUCT:	Literature Review (or component)
AUTHORSHIP STATEMENT:	
FORMAT:	A number of blood banking topics will be provided to students to choose from at the beginning of the trimester. Students may choose to review other blood banking topics but this must be approved by the Course Coordinator. Students will be provided with instructions on how to complete the assignment, including detailed requirements for the assignment and a marking rubric on Canvas at the beginning of the trimester.

CRITERIA:

No.		Learning Outcome assessed
1	demonstration of blood banking and transfusion science knowledge	1 2 3
2	ability to source and reference current relevant scientific information	2 3 4
3	ability to analyse, interpret and summarise relevant information	1 2 3
4	linking implications to global and local community	1 2 3 4
5	identification of ethical issues	2 3 4
6	adherence to format	2 3

GENERIC SKILLS:	Communication, Problem solving, Organisation, Applying technologies, Information literacy

All - Assessment Task 3: BIM200 Practical Exam (30%)

GOAL:	To assess the student's competency in the application and interpretation of blood banking theory, concepts and skills encountered in practical classes throughout the trimester.
PRODUCT:	Practical / Laboratory Skills
AUTHORSHIP STATEMENT:	
FORMAT:	Task 3 will take place in the scheduled lab on week 12. Students will have to process blood banking requests and complete case studies. This will assess their blood banking technical skills and competencies. The assessment may include some multi-choice questions and short answer questions.
CRITERIA:	

No.		Learning Outcome assessed
1	principles, theories, and concepts	1 2
2	importance of blood banking and transfusion sciences in the local and global community	2
3	scientific terminologies	1

GENERIC SKILLS:	Collaboration, Problem solving, Organisation, Applying technologies

6.4. Assessment to competency mapping

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
AIMS - COMPETENCY-BASED STANDARDS FOR MEDICAL SCIENTISTS				
All delivery modes	Examination - Centrally Scheduled	BIM200 Final theory exam (20%)	1.1.2	Taught, Practiced, Assessed
			1.1.3	Taught, Practiced, Assessed
			1.5.1	Taught, Practiced, Assessed
			2.1.2	Taught, Practiced, Assessed
			2.3.1	Taught, Practiced
			3.3.2	Taught, Practiced, Assessed
			3.4.1	Taught, Practiced
			4.1.1	Taught, Practiced
	Literature Review (or component)	BIM200 Research Study Assignment (20%)	6.2.3	Taught, Practiced, Assessed
	Practical / Laboratory Skills	BIM200 Practical Exam (30%)	1.1.2	Taught, Practiced, Assessed
			1.3.4	Taught, Practiced, Assessed
			1.5.1	Taught, Practiced, Assessed
			1.6.6	Taught, Practiced, Assessed
			1.6.7	Taught, Practiced, Assessed
			1.6.8	Taught, Practiced, Assessed
			2.2.1	Taught, Practiced
			2.3.1	Taught, Practiced, Assessed
	Quiz/zes	BIM200 Intra trimester review quizzes (30%)	2.1.2	Taught, Practiced, Assessed

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

You need regular access to the resource(s) below. Many texts are available as ebooks through the Library at no additional cost.

REQUIRED?	AUTHOR	YEAR	TITLE	EDITION	PUBLISHER
Recommended	Paula R. Howard	2020	Basic and Applied Concepts of Blood Banking and Transfusion Practices	5th	Mosby

8.2. Specific requirements

To successfully complete the UB001 Bachelor of Medical Laboratory Science (Pathology) and meet accreditation requirements of AIMS, UB001 students enrolled in BIM200 must attend and participate in all on-campus practical classes. Students must attain at least 50% in the theory and at least 80% in the laboratory practical assessments. All final theory assessments within BIM200 will be invigilated.

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:
(a) The final mark is in the percentage range 47% to 49.4%; and
(b) The course is graded using the Standard Grading scale

10.3. Assessment: Submission penalties

Late submissions may be penalised up to and including the following maximum percentage of the assessment task's identified value, with weekdays and weekends included in the calculation of days late:
(a) One day: deduct 5%;
(b) Two days: deduct 10%;
(c) Three days: deduct 20%;
(d) Four days: deduct 40%;
(e) Five days: deduct 60%;
(f) Six days: deduct 80%;
(g) Seven days: A result of zero is awarded for the assessment task.

The following penalties will apply for a late submission for an online examination:
Less than 15 minutes: No penalty
From 15 minutes to 30 minutes: 20% penalty
More than 30 minutes: 100% penalty

10.4. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.5. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

10.6. General Enquiries

For course-specific questions, contact your teaching staff or Course Coordinator.

For other enquiries or to access support, please contact Student Central:

- UniSC Student Central
- UniSC Adelaide Student Central