COURSE OUTLINE

MLS100 Haematology

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

This course provides an introduction to haematology, an area of general pathology that is concerned with diseases that affect the blood, such as blood clotting disorders, anaemias, leukaemias and haemoglobinopathies. Blood transfusion will also be discussed during the course. Competencies in haematological techniques conducted in pathology laboratories including full blood count, microscopy and the review of blood films, white cell differential counts, staining methods for microscopy, blood grouping and coagulation tests will be assessed.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Weekly interactive learning guides	1.5hrs	Week 1	12 times
Tutorial/Workshop 1 – Refer to schedule	2hrs	Week 2	6 times
Laboratory 1 – Weekly on campus laboratory	3hrs	Week 1	12 times

1.3. Course Topics

- Introduction to Haematology
- Blood cell development and function
- Full blood count (FBC)
- Counting Blood Cells
- Automation and QC
- Erythrocytes and anaemias
- Leucocytes and leukaemias
- Coagulation pathways, tests and disorders
- Importance of platelets and vascular structures in haemostasis
- Introduction to Immunohaematology

2. What level is this course?

100 Level (Introductory)

Engaging with discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Limited or no prerequisites. Normally, associated with the first full-time study year of an undergraduate program.

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 Describe the process of hematopoiesis, including the production, structure, and function of red blood cells, white blood cells, and platelets.	Knowledgeable Empowered Engaged Communication Organisation Applying technologies Information literacy	7.2.1
2 Demonstrate competency in the performance of common haematological tests and procedures including a full blood count, the preparation, staining and microscopic evaluation of blood films, reticulocyte count, manual platelet estimate, coagulation assays and basic blood grouping.	Knowledgeable Creative and critical thinker Engaged Communication Problem solving Organisation Applying technologies Information literacy	1.3, 1.5, 1.6, 2.1, 2.2, 2.3, 3.1, 5.4, 6.2, 7
3 Identify and describe the clinical features, pathophysiology, classification and appropriate diagnostic tests for common haematological disorders.	Knowledgeable Creative and critical thinker Empowered Engaged Communication Problem solving Organisation Applying technologies Information literacy	2.1, 2.2, 2.3, 3.1, 7.2
4 Understand the theory and interpretation of the results of routine haematology laboratory tests and use appropriate terminology to prepare haematological reports and formulate differential diagnoses.	Knowledgeable Creative and critical thinker Empowered Engaged Communication Collaboration Problem solving Organisation Applying technologies Information literacy	1.6.3, 1.6.6, 1.6.7, 1.6.8, 1.6, 2.1, 3.1, 5, 7.1

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN INSTITUTE OF MEDICAL AND CLINICAL SCIENTISTS	
1.6.3	Read and validate results - Equipment based testing: Results are calculated from data outputs according to documented procedures.
1.6.6	Read and validate results - Observation based testing: Available clinical information is reviewed.
1.6.7	Read and validate results - Observation based testing: Critical observations are made and recorded.
1.6.8	Read and validate results - Observation based testing: Observations and evaluations are summarised, using the appropriate knowledge base, and summary is recorded according to regulatory protocols.
1.3	Collection, preparation and analysis of clinical material: Evaluate specimen suitability prior to analysis

CODE	COMPETENCY
1.5	Collection, preparation and analysis of clinical material: Process specimen utilising appropriate techniques
1.6	Collection, preparation and analysis of clinical material: Read and validate results
2.1	Correlation and validation of results of investigations using knowledge of method(s) including analytical principles and clinical information: Assess validity of data/results against possible range of outcomes
2.2	Correlation and validation of results of investigations using knowledge of method(s) including analytical principles and clinical information: Validation of results
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
3.1	Interpretation, reporting and issuing of laboratory results: Verify report(s) with sample identification
5	Maintenance and promotion of safe working practices
5.4	Maintenance and promotion of safe working practices: Respond appropriately to emergency situations
6.2	Professional accountability and participation in continuing professional development: Maintain and update scientific/technical knowledge and skills
7.2.1	Makes independent, professional judgements: Problems are solved using sound judgement based upon knowledge and practical experience.
7	Responsibility for professional practice including test selection, development and use of laboratory investigations
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

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

Enrolled in Program UB001, SC385, SC211, SC357 or SC355

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

You will be introduced to patient case studies and can attempt calculations, haematology terminology and morphology identification through the in-class activities that will also provide you with feedback and help prepare you for the assessment tasks in the course.

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	1	Artefact - Technical and Scientific	Individual	20%	30 minutes per case report	Throughout teaching period (refer to Format)	In Class
All	2a	Practical / Laboratory Skills	Individual	20%	120min + 10min perusal	Week 9	In Class
All	2b	Practical / Laboratory Skills	Individual	30%	150min + 10 min perusal	Week 12	In Class
All	3	Examination - Centrally Scheduled	Individual	30%	120min + 10 min perusal	Exam Period	Exam Venue

All - Assessment Task 1: MLS100 Haematology Case Reports

GOAL:	To assess student interpretation of haematology results, examination of a blood film and reporting of case studies using appropriate haematology terminology and conventions.
PRODUCT:	Artefact - Technical and Scientific
AUTHORSHIP STATEMENT:	
FORMAT:	On paper, in laboratory classes in weeks 4, 5, 6 and 7. Further directions about the assessment requirements will be available in the tutorials leading up to and during the assessment task, and information will be provided to students by the course coordinator on the MLS100 Haematology Canvas site.
CRITERIA:	

No.		Learning Outcome assessed
1	Calculate & interprete haematology parameters of automated results.	4
2	Provide comment on the blood film	1 2
3	Complete differential count	2
4	Generate report on blood film and autmated results	3 4
5	Explain significance of patient presentation, the significance of results and any recommendations for further testing.	3 4

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

All - Assessment Task 2a: MLS100 Mid-trimester theory & practical assessment

GOAL:	To develop satisfactory laboratory skills and competencies in Haematology that would meet the requirements of AIMS for the training of medical laboratory scientists.
PRODUCT:	Practical / Laboratory Skills
AUTHORSHIP STATEMENT:	
FORMAT:	The theory & practical assessment will take place during the regular practical class time in week 9. The theory & practical assessment will consist of a series of practical tests designed to assess your competency in haematology techniques and related theory.

CRITERIA:

No.		Learning Outcome assessed
1	Perform various haematological techniques e.g. differential count, coagulation assays	2
2	Identification of blood cell morphology using light microscopy and still images	1 2 3
3	Write report on case, haematology results and blood film.	1 3 4
4	Interpret clinical history provided and haematology results generated or provided	3 4

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

All - Assessment Task 2b: MLS100 Final Practical Assessment

GOAL:	To develop satisfactory laboratory skills and competencies in Haematology that would meet the requirements of AIMS for the training of medical laboratory scientists.
PRODUCT:	Practical / Laboratory Skills
AUTHORSHIP STATEMENT:	
FORMAT:	The practical assessment will take place during the regular practical class time in week 12. The practical assessment will consist of a series of practical tests designed to assess your competency in haematology techniques and related theory.

CRITERIA:

No.		Learning Outcome assessed
1	Satisfactory performance of haematological techniques e.g. differential count, coagulation assays	2
2	Interpret clinical history provided and haematology results generated or provided	3 4
3	Identification of blood cell morphology using light microscopy and still images	1 2 3
4	Write report on case, haematology results and blood film.	1 3 4

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

All - Assessment Task 3: MLS100 Final theory examination

GOAL:	To assess students understanding and application of haematology course content covered in learning materials, tutorials and laboratory practical classes.
PRODUCT:	Examination - Centrally Scheduled
AUTHORSHIP STATEMENT:	
FORMAT:	Centrally scheduled invigilated on-campus exam consisting of multiple choice questions, short answer questions and case studies.
CRITERIA:	**No.** — **Learning Outcome assessed** 1 Demonstrate ability to recall and apply information from the MLS100 Haematology learning materials, tutorial and practical laboratory classes. — 1 3 4 2 Use haematology knowledge in case scenarios to generate haematology reports, to interpret or suggest further tests to support differential diagnosis. — 1 2 3 4
GENERIC SKILLS:	Communication, Problem solving, Organisation, Applying technologies, Information literacy

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	Artefact - Technical and Scientific	MLS100 Haematology Case Reports	1.1.2	Taught, Practiced
			1.1.3	Taught
			1.2.1	Taught, Practiced
			1.3.1	Taught, Practiced
			1.5.4	Taught, Practiced, Assessed
			1.6.1	Taught, Practiced
			1.6.3	Taught, Practiced, Assessed
			1.6.4	Taught, Practiced, Assessed
			1.6.6	Taught, Practiced, Assessed
			1.6.7	Taught, Practiced, Assessed
			1.6.8	Taught, Practiced, Assessed
			2.1.1	Taught, Practiced, Assessed
			2.3.1	Taught, Practiced, Assessed
			3.2.1	Taught, Practiced, Assessed

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
			3.2.4	Taught, Practiced, Assessed
			3.2.6	Taught, Practiced, Assessed
			3.3.1	Taught, Practiced, Assessed
			3.3.2	Taught, Practiced, Assessed
			5.3.3	Taught, Practiced
			5.3.4	Taught, Practiced
			5.3.9	Taught, Practiced
			5.4.1	Taught, Practiced
			5.4.4	Taught
			6.5.6	Taught, Practiced, Assessed
			7.2.1	Taught, Practiced, Assessed
			9.3.1	Taught, Practiced, Assessed
	Examination - Centrally Scheduled	MLS100 Final theory examination	7.2.1	Taught, Practiced, Assessed
			7.2.2	Taught, Practiced, Assessed
	Practical / Laboratory Skills	MLS100 Mid-trimester theory & practical assessment	1.1.1	Taught, Practiced, Assessed
			1.1.2	Taught, Practiced, Assessed
			1.1.3	Taught, Practiced, Assessed
			1.2.1	Taught, Practiced, Assessed
			1.3.1	Taught, Practiced, Assessed
			1.5.4	Taught, Practiced, Assessed
			1.6.1	Taught, Practiced
			1.6.2	Taught, Practiced, Assessed
			1.6.3	Taught, Practiced, Assessed
			1.6.4	Taught, Practiced, Assessed

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
			1.6.6	Taught, Practiced, Assessed
			1.6.7	Taught, Practiced, Assessed
			1.6.8	Taught, Practiced, Assessed
			2.3.1	Taught, Practiced, Assessed
			3.2.4	Taught, Practiced, Assessed
			3.2.6	Taught, Practiced, Assessed
			3.3.1	Taught, Practiced, Assessed
			3.3.2	Taught, Practiced, Assessed
			5.3.3	Taught, Practiced
			5.3.4	Taught, Practiced
			5.4.1	Taught, Practiced, Assessed
			5.4.4	Taught, Practiced, Assessed
			6.5.6	Taught, Practiced, Assessed
			7.2.1	Taught, Practiced, Assessed
			7.2.2	Taught, Practiced, Assessed
		MLS100 Final Practical Assessment	1.1.2	Taught, Practiced, Assessed
			1.3.1	Taught, Practiced, Assessed
			1.6.1	Taught, Practiced, Assessed
			1.6.3	Taught, Practiced, Assessed
			1.6.4	Taught, Practiced, Assessed
			1.6.6	Taught, Practiced, Assessed
			1.6.7	Taught, Practiced, Assessed
			1.6.8	Taught, Practiced, Assessed

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
			2.1.1	Taught, Practiced, Assessed
			2.3.1	Taught, Practiced, Assessed
			3.2.1	Taught, Practiced, Assessed
			3.2.4	Taught, Practiced, Assessed
			3.3.1	Taught, Practiced, Assessed
			3.3.2	Taught, Practiced, Assessed
			5.3.3	Taught, Practiced
			5.4.1	Taught, Practiced, Assessed
			6.5.6	Taught, Practiced
			7.2.1	Taught, Practiced, Assessed
			7.2.2	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.

7.1. Schedule

PERIOD AND TOPIC	ACTIVITIES
1. Introduction to Haematology	Blood cell types: structure and function Haemopoiesis Safety in the Haematology laboratory Care and use of the microscope
2. Counting and Automation	Introduction to FBC and red cell parameters Counting of blood cells Automation
3. Introduction to anaemia	Normocytic anaemias, blood film microscopy, differential counts, staining & reticulocytes
4. Microcytic anaemias	Blood film morpholgy, iron deficiency anaemias, thalassemia, Hb electrophoresis
5. Macrocytic anaemias	Megaloblastic anaemia, liver disease
6. Normal & non-malignant leucocytes	IM, toxic changes, infections
7. Lymphoid leukaemias	ALL, CLL
8. Myeloid leukaemia	AML, CML
9. Haemostasis	Normal haemostasis Vascular, platelet and coagulation phases Mid-trimester practical and theory exam
10. Coagulation disorders and investigations	Routine tests for haemostasis, disorders of haemostasis, liver disease, anti-coagulation
11. Introduction to immunohaematology	Antigens, antibodies, role of lymphocytes
12. Introduction to Blood Banking	ABO, RhD, crossmatch, blood products

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	A. Victor Hoffbrand,David P. Steensma	2019	Hoffbrand's Essential Haematology	8th	John Wiley & Sons
Recommended	Elaine Keohane,Larry Smith,Jeanine Walenga	2019	Rodak's Hematology	6th	Saunders

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 MLS100 must attend and participate in all on-campus practical classes. All final theory assessments will be invigilated. UB001 students must attain ≥50% for theory and ≥50% laboratory practical assessment.

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