COURSE OUTLINE

MLS100 Haematology

School: School of Health - Biomedicine

2024 | Semester 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 usc.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	11 times
Tutorial/Workshop 1 – Refer to schedule	2hrs	Week 2	7 times
Laboratory 1 – Weekly on campus laboratory	3hrs	Week 1	13 times

1.3. Course Topics

- Introduction to Haematology
- Blood Cell Development
- Erythrocytes and Erythrocyte Disorders
- Leucocytes and Leucocyte Disorders
- Counting Blood Cells
- Platelets and Blood Coagulation Pathways
- Platelet & Coagulation Tests
- Introduction to Blood Transfusion

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 Completing these tasks successfully will contribute to you becoming...
1	Identify the different components, production and functions of blood.	Knowledgeable Creative and critical thinker
2	Understand the theory and interpret the results of routine haematology laboratory tests.	Knowledgeable Creative and critical thinker
3	Identify and describe the features, classification and diagnostic tests for the major haematological malignancies and disorders outlined.	Knowledgeable Creative and critical thinker
4	Show competency in routine practical techniques in haematology	Knowledgeable Engaged

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

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

Formative quizzes will be available throughout the course to provide feedback on your academic 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	Case Study	Group	20%	Written report of up to 1000 +/- 10% words.	Week 6	Online Assignment Submission with plagiarism check
All	2a	Practical / Laboratory Skills	Individual	20%	120min	Week 8	In Class
All	2b	Practical / Laboratory Skills	Individual	30%	150min	Week 12	In Class
All	3	Examination - Centrally Scheduled	Individual	30%	120min	Exam Period	Exam Venue

All - Assessment Task 1: Haematology Case Study

GOAL:	Complete case studies describing the features, interpretation and diagnostic tests for haematology disorders.
PRODUCT:	Case Study
FORMAT:	Students will work in pairs to complete 1-2 haematology case studies. As this is a team task both students are expected to contribute to the case studies. Students will submit their case studies online through a blended learning approach for each case study in week 6. Assessment will be based on overall group performance of the completed case studies, rather than on an individual basis. 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.	2
2	Provide comment on the blood film	1 4
3	Complete differential count	4
4	Generate report on blood film and autmated results	2 3
5	Explain significance of patient presentation, the significance of results and any recommendations for further testing.	2 3

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

All - Assessment Task 2a: Mid-semester 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 scientist. Students must complete the training for this assessment in the preceding labs before attending the assessment - this includes attendance at all the on campus laboratory practical.
PRODUCT:	Practical / Laboratory Skills
FORMAT:	The theory & practical assessment will be 2 hours in duration and will take place during the regular practical class time in week 8. 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	4
2	Identification of blood cell morphology using light microscopy and still images	1 3 4
3	Write report on case, haematology results and blood film.	1 2 3
4	Interpret clinical history provided and haematology results generated or provided	2 3

GENERIC SKILLS:	Problem solving, Organisation, Applying technologies

All - Assessment Task 2b: 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 scientist. Students must complete the training for this assessment in the preceding labs before attending the assessment - this includes attendance at all the on campus laboratory practical.
PRODUCT:	Practical / Laboratory Skills
FORMAT:	The practical assessment will be up to 2.5 hours in duration and 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	4
2	Interpret clinical history provided and haematology results generated or provided	2 3
3	Identification of blood cell morphology using light microscopy and still images	1 3 4
4	Write report on case, haematology results and blood film.	1 2 3

GENERIC SKILLS:	Problem solving, Organisation, Applying technologies

All - Assessment Task 3: 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
FORMAT:	Multiple choice questions, short answer questions, case studies and essay questions.
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 2 3
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:	Problem solving, Applying technologies

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. Introduction to anaemia	Normocytic anaemias, blood film microscopy, differential counts, staining & reticulocytes
3. Microcytic anaemias	Blood film morpholgy, iron deficiency anaemias, thalassemia, Hb electrophoresis
4. Macrocytic anaemias	Blood film morphology, megaloblastic anaemia, liver disease
5. Normal & non-malignant leucocytes	Blood film morphology, IM, toxic changes, infections
6. Lymphoid leukaemias	Blood film morphology, ALL, CLL
7. Myeloid leukaemia	Blood film morphology, AML, CML
8. Haemostasis	Normal haemostasis Vascular, platelet and coagulation phases Mid-semester practical exam
9. Coagulation disorders and investigations	Routine tests for haemostasis, disorders of haemostasis, liver disease, anti-coagulation
10. Introduction to immunology	Antigens, antibodies, role of lymphocytes
11. Introduction to immunohaematology	ABO, RhD, crossmatch, blood products
12. Two hour revision tutorial and final practical exam. No learning material	Revision RBC and WBC
13. Two hour revision tutorial. No learning material.	Revision haemostasis & blood banking

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

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

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

MLS100 has been designed to meet accreditation requirements of the Australian Institute of Medical and Clinical Scientists (AIMS). To pass MLS100, students must
- attend and participate in all on-campus practical classes.
- attain at least 50% in both laboratory practical examinations
- attain at least 50% in the final theory examination.

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

To meet AIMS requirements students must achieve at least 50% in the theory and 50% in both practical assessments to pass MLS100.
Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:
The final mark is in the percentage range 47% to 49.4%
The course is graded using the Standard Grading scale
You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate (the rates are cumulative):
- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day
- 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task.

Weekdays and weekends are included in the calculation of days late.
To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: 07 5430 1168 or using the SafeZone app. For general enquires contact the SafeUniSC team by phone 07 5456 3864 or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call 07 5430 1226 or email studentwellbeing@usc.edu.au.

10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

10.8. 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

10.9. 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.

10.10. General Enquiries

In person:

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au