

MLS400 Case-based Laboratory Practice

School: School of Health - Biomedicine

2027 | Session 1

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 will consolidate laboratory skills attained in the program, ahead of the final medical laboratory placement. You will develop skills and competencies that are required for professional practice, based on your study of authentic medical laboratory cases.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Online	3hrs	Week 2	6 times
Laboratory 1 – Compulsory attendance for case based lab practical	3hrs	Week 2	5 times
Tutorial/Workshop 1 – Case discussion	2hrs	Week 1	5 times

1.3. Course Topics

- Introduction to Pathology Organisations and Interconnectedness of Disciplines within Laboratories
- Pathology Specimen and Sample Management
- General Practice Case Studies
- Intensive Care Case Studies
- Emergency Department Case Studies
- Oncology Case Studies
- Surgical Case Studies
- Renal Case Studies

2. What level is this course?

400 Level (Graduate)

Demonstrating coherence and breadth or depth of knowledge and skills. Independent application of knowledge and skills in unfamiliar contexts. Meeting professional requirements and AQF descriptors for the degree. May require pre-requisites where discipline specific introductory or developing knowledge or skills is necessary. Normally undertaken in the third or fourth 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	GRADUATE QUALITIES MAPPING	PROFESSIONAL STANDARD MAPPING *
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...	Australian Institute of Medical and Clinical Scientists
1 Identify specimen types required and test procedures performed in various departments of pathology laboratories.	Knowledgeable	1.1.4, 1.1.6, 1.1.7, 1.2.3, 1.3.2, 1.3.3, 1.3.4, 7.4.1
2 Interpret normal and abnormal haematology, coagulation, biochemistry, microbiology, immunohaematology and histology results in various clinical scenarios.	Creative and critical thinker Problem solving	1.6.1, 1.6.2, 1.6.3, 1.6.4, 2.2.1, 2.3.1, 3.2.1, 3.2.6, 3.2.7, 3.3.1, 3.3.2, 3.3.3, 4.4.1
3 Understand the interrelationship between laboratory result reports from different pathology laboratory departments and their contribution to clinical diagnoses.	Creative and critical thinker Information literacy	1.6.6, 1.6.7, 1.6.8, 2.1.1, 2.1.2, 7.3.1
4 Apply time management skills and prioritisation in a multidisciplinary laboratory scenario.	Engaged Organisation	1.4.1, 1.4.2, 1.4.3, 1.5.1

* Competencies by Professional Body

CODE	COMPETENCY
AUSTRALIAN INSTITUTE OF MEDICAL AND CLINICAL SCIENTISTS	
1.1.4	Ensure the appropriateness of sample collection procedures: Patient preparation and specimen collection is consistent with test(s) requested.
1.1.6	Ensure the appropriateness of sample collection procedures: Collection is performed, consistent with established protocols and safe working practices.
1.1.7	Ensure the appropriateness of sample collection procedures: Specimen is collected into an appropriate container, then immediately and correctly labelled according to established protocols and regulations including minimum labelling requirements.
1.2.3	Ensure the appropriateness of specimen reception procedures: Specimen suitability for further processing 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.
1.6.1	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.
1.6.6	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.

CODE COMPETENCY

- 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.
- 1.4.1 Determine the priority of laboratory requests (triage) to effectively manage service requirements: Priority of analysis is modified based on clinical necessity, as indicated by medical officer(s) and laboratory guidelines, then by staff and equipment availability.
- 1.4.2 Determine the priority of laboratory requests (triage) to effectively manage service requirements: Workload is organised to ensure optimal patient care and most efficient use of resources.
- 1.4.3 Determine the priority of laboratory requests (triage) to effectively manage service requirements: Workload is continually monitored and reorganised as required to accommodate changes in priority
- 1.5.1 Process specimen utilising appropriate techniques: Appropriate test procedure is selected for the analysis required, the nature of available specimen(s) and the urgency of the request.
- 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.
- 2.1.1 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.
- 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.
- 3.2.6 Use the administrative systems in place to communicate the results: Advice or comment pertaining to the test procedure or outcome is reported in a clear and unambiguous manner.
- 3.2.7 Use the administrative systems in place to communicate the results: Relevant reference intervals and, if appropriate, clinical decision limits are included in reports as per established 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.
- 4.4.1 Ensure appropriate resources are available to the laboratory: Adequate and up-to-date information is utilised at time and point of need to assist in interpretation of test results and provision of advice, commensurate with experience.
- 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.
- 7.3.1 Demonstrates knowledge of contemporary ethical issues impinging on Medical Science: Data and events are critically analysed from an ethical perspective.

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

MLS300 and MLS301

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

Regular quizzes conducted throughout course and discussed in subsequent tutorials.

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	Quiz/zes	Individual	40%	5 * 20 minutes	Throughout teaching period (refer to Format)	In Class
All	2	Oral and Written Piece	Individual or Group	20%	15-20 minutes	Throughout teaching period (refer to Format)	In Class
All	3	Activity Participation	Individual	40%	3 hours	Week 6	In Class

All - Assessment Task 1: Quizzes

GOAL:	To demonstrate understanding of result interpretation of each case.		
PRODUCT:	Quiz/zes		
FORMAT:	Individual, closed book during lab class.		
CRITERIA:	No.		Learning Outcome assessed
	1	Assessment criteria are mapped to the course learning outcomes at final approval	1 2 3
	2	Understanding of use of appropriate pathology tests in various clinical scenarios.	1
	3	Interpret and correlate normal and abnormal results from pathology tests from a variety of clinical scenarios.	2 3
GENERIC SKILLS:	Problem solving, Applying technologies, Information literacy		

All - Assessment Task 2: Case Study Presentation

GOAL:	Review and make presentation of a case study.		
PRODUCT:	Oral and Written Piece		
FORMAT:	Oral presentation with supporting PowerPoint slides in tutorials. Orals presentations will begin in week 10 or 11.		
CRITERIA:	No.		Learning Outcome assessed
	1	Critical review of journal case studies.	2 3
	2	Professional presentation and understanding of published pathology case study.	3
GENERIC SKILLS:	Communication, Collaboration, Information literacy		

All - Assessment Task 3: Practical Examination

GOAL:	Perform efficient and accurate testing and interpretation of a pathology episode.		
PRODUCT:	Activity Participation		
FORMAT:	Practical laboratory		
CRITERIA:	No.		Learning Outcome assessed
	1	Performance of laboratory testing and interpretation of results.	1 2 4
	2	Collate and interpret performed and provided results.	1 2 3 4
GENERIC SKILLS:	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				
	Activity Participation	Practical Examination	1.2.1	Taught, Practiced, Assessed
			1.2.2	Taught, Practiced, Assessed
			1.2.3	Taught, Practiced, Assessed
			1.2.4	Taught, Practiced, Assessed
			1.3.1	Taught, Practiced, Assessed
			1.3.2	Taught, Practiced, Assessed
			1.3.3	Taught, Practiced, Assessed
			1.3.4	Taught, Practiced, Assessed
			1.3.7	Taught, Practiced, Assessed
			1.4.1	Taught, Practiced, Assessed
			1.4.2	Taught, Practiced, Assessed
			1.5.1	Taught, Practiced, Assessed
			1.5.2	Taught, Practiced, Assessed
			1.5.3	Taught, Practiced, Assessed
			1.5.4	Taught, Practiced, Assessed
			1.6.1	Taught, Practiced, Assessed
			1.6.2	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

PROGRAMME DELIVERY MODE	ASSESSMENT TYPE	TITLE	COMPETENCY	TEACHING METHODS
All delivery modes	Oral and Written Piece	Case Study Presentation	1.6.8	Taught, Practiced
			7.1.2	Taught, Practiced, Assessed
			6.2.2	Taught, Practiced, Assessed
			6.2.3	Taught, Practiced, Assessed
			6.2.4	Taught, Practiced, Assessed
			6.3.1	Taught, Practiced, Assessed
			7.4.1	Taught, Practiced, Assessed
			7.4.2	Taught, Practiced, Assessed
			9.1.1	Taught, Assessed
			Quiz/zes	Quizzes
	1.2.2	Taught, Practiced, Assessed		
	1.3.1	Taught, Practiced, Assessed		
	1.3.2	Taught, Practiced, Assessed		
	1.3.3	Taught, Practiced, Assessed		
	1.3.4	Taught, Practiced, Assessed		
	1.4.1	Taught, Practiced, Assessed		
	1.4.2	Taught, Practiced, Assessed		
	1.5.1	Taught, Practiced, Assessed		
	1.5.2	Taught, Practiced, Assessed		
	1.5.3	Taught, Practiced, Assessed		
	1.5.4	Taught, Practiced, Assessed		
	1.6.1	Taught, Practiced, Assessed		
	1.6.2	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		
	2.1.1	Taught, Practiced, Assessed		
	2.1.2	Taught, Practiced, Assessed		
2.2.1	Taught, Practiced, Assessed			
7.4.1	Taught, Assessed			
7.4.2	Taught, Assessed			
9.3.2	Taught			

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

There are no required/recommended resources for this course.

8.2. Specific requirements

Not applicable

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. 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](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUniSC team by phone [07 5456 3864](tel:0754563864) 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](tel:0754301226) 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