COURSE OUTLINE

# 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 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 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<br>On successful completion of this course, you should be able to... | GRADUATE QUALITIES MAPPING<br>Completing these tasks successfully will contribute to you becoming... | PROFESSIONAL STANDARD MAPPING *<br>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<br>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<br>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<br>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

### 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

Regular quizes 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:** Quizes

| | |
|---|---|
| **GOAL:** | To demonstrate understanding of result interpretation of each case. |
| **PRODUCT:** | Quiz/zes |
| **AUTHORSHIP STATEMENT:** | |
| **FORMAT:** | Individual, closed book during lab class. |
| **CRITERIA:** | **No.** — **Learning Outcome assessed**<br>1 — Assessment criteria are mapped to the course learning outcomes at final approval — 1 2 3<br>2 — Understanding of use of appropriate pathology tests in various clinical scenarios. — 1<br>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 |
| **AUTHORSHIP STATEMENT:** | |
| **FORMAT:** | Oral presentation with supporting PowerPoint slides in tutorials.<br>Orals presentations will begin in week 10 or 11. |
| **CRITERIA:** | **No.** — **Learning Outcome assessed**<br>1 Critical review of journal case studies. — 2 3<br>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 |
| **AUTHORSHIP STATEMENT:** | |
| **FORMAT:** | Practical laboratory |
| **CRITERIA:** | **No.** — **Learning Outcome assessed**<br>1 Performance of laboratory testing and interpretation of results. — 1 2 4<br>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** | | | | |
| All delivery modes | 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 |

| PROGRAMME DELIVERY MODE | ASSESSMENT TYPE | TITLE | COMPETENCY | TEACHING METHODS |
|---|---|---|---|---|
| | | | 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 |
| | | | 7.1.2 | Taught, Practiced, Assessed |
| | Oral and Written Piece | Case Study Presentation | 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 | Quizes | 1.2.1 | Taught, Practiced, Assessed |
| | | | 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 |

| PROGRAMME DELIVERY MODE | ASSESSMENT TYPE | TITLE | COMPETENCY | TEACHING METHODS |
|---|---|---|---|---|
| | | | 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. 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