

MLS200 Introduction to Clinical Microbiology & Immunology

School: School of Health - Biomedicine

2025 Semester 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

Clinical microbiology is the study of microorganisms which cause infections in humans, and immunology considers the body's defence mechanisms. This course introduces you to the theoretical knowledge and practical skills required to work in microbiology and immunology disciplines, and help you to develop the skills needed to work safely in a PC2 containment facility, including the processing of clinical specimens, molecular diagnostics, recording clinical laboratory results and writing clinical laboratory reports.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Fully independent asynchronous learning	2hrs	Week 1	13 times
Laboratory 1 – On-campus laboratory practicals to develop skills and gain competency in immunology laboratory techniques this will take place on weeks 1 to 4.	2hrs	Week 1	4 times
Tutorial/Workshop 1 – There will be 4 tutorial classes that will take place between weeks 6 to 13.	2hrs	Week 6	4 times
Laboratory 2 – On-campus laboratory practicals to develop skills and gain competency in microbiology laboratory techniques and in working in a PC2 environment. The MLS200 Intensive Laboratory 2 classes will take place after the completion of Semester 1.	3hrs	Refer to Format	8 times

1.3. Course Topics

1. Microbiology in health and disease
2. Good microbiological aseptic techniques and working in PC2 laboratories.
3. Metabolism of microorganisms.
4. Growth and nutrition of bacterial pathogens.
5. Detecting, isolating and identifying microbial pathogens.
6. Introduction to microbial genetics and DNA/RNA detection of microorganisms.
7. Antimicrobial agents and multi-resistant microorganisms
8. Viruses and viral infections
9. Fungal and parasitic infections
10. The immune and complement system
11. B cells and antibodies
12. T cells and antigen presentation
13. Antigen & antibodies in health and disease

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		GRADUATE QUALITIES
On successful completion of this course, you should be able to...		Completing these tasks successfully will contribute to you becoming...
1	Explain the role of microorganisms in human health and disease	Knowledgeable Communication
2	Compare and contrast bacterial, viral, and parasitic infections, and concepts of treatment and control.	Creative and critical thinker Communication Problem solving
3	Apply skills to detect, isolate, identify and report a range of microorganisms.	Empowered Communication Problem solving Organisation Applying technologies
4	Discuss how B and T lymphocytes, and antigen and antibodies contribute to immune responses in health and disease.	Knowledgeable

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

LFS100 and MLS101 and enrolled in UB001 or SC211

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

Early feedback will be provided during tutorials and through activity participation in laboratory practical classes to help students prepare for the assessments.

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	Activity Participation	Individual	10%	Across all practical laboratory classes (including early feedback on formative immunology tasks (non-graded) in the first third of the teaching period).	Refer to Format	In Class
All	2	Quiz/zes	Individual	30%	2hr	Week 7	In Class
All	3a	Examination - Centrally Scheduled	Individual	30%	120min + 10min perusal	Exam Period	Exam Venue
All	3b	Practical / Laboratory Skills, and Written Piece	Individual	30%	3 Hours	Refer to Format	In Class

All - Assessment Task 1: Practical portfolio

GOAL:	To ensure that students are actively participating in laboratory practical classes and receiving early formative feedback when applying immunology & microbiology theory from learning materials.													
PRODUCT:	Activity Participation													
FORMAT:	Completing laboratory tasks as specified in MLS200 laboratory manual through the semester.													
CRITERIA:	<table border="1"> <thead> <tr> <th>No.</th> <th></th> <th>Learning Outcome assessed</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Explanation of the role of microorganisms in human health and disease</td> <td>1</td> </tr> <tr> <td>2</td> <td>Comparison and contrast of bacterial, viral, and parasitic infections, and concepts of treatment and control.</td> <td>2</td> </tr> <tr> <td>3</td> <td>Application of skills to detect, isolate, identify and report a range of microorganisms.</td> <td>3</td> </tr> </tbody> </table>	No.		Learning Outcome assessed	1	Explanation of the role of microorganisms in human health and disease	1	2	Comparison and contrast of bacterial, viral, and parasitic infections, and concepts of treatment and control.	2	3	Application of skills to detect, isolate, identify and report a range of microorganisms.	3	
No.		Learning Outcome assessed												
1	Explanation of the role of microorganisms in human health and disease	1												
2	Comparison and contrast of bacterial, viral, and parasitic infections, and concepts of treatment and control.	2												
3	Application of skills to detect, isolate, identify and report a range of microorganisms.	3												
GENERIC SKILLS:	Communication, Problem solving, Organisation, Applying technologies													

All - Assessment Task 2: Immunology concepts

GOAL:	Mid-semester assessment of knowledge in immunology.	
PRODUCT:	Quiz/zes	
FORMAT:	This will take place in week 7 in the tutorial class. Students will apply the theory and techniques gained from weeks 1 to 4. The quiz will assess your knowledge & application of immunology concepts. This is a closed book, on-campus invigilated assessment.	
CRITERIA:	No.	Learning Outcome assessed
	1	Discussion of how B and T lymphocytes, and antigen and antibodies contribute to immune responses in health and disease. 4
GENERIC SKILLS:	Problem solving, Organisation, Applying technologies, Information literacy	

All - Assessment Task 3a: Microbiology theory assessment

GOAL:	For the student to demonstrate their knowledge and understanding of theoretical, diagnostic, practical and clinical concepts of covered in clinical microbiology, aligned with AIMS expectations of medical laboratory scientists.	
PRODUCT:	Examination - Centrally Scheduled	
FORMAT:	Task 3a is a closed book, on-campus invigilated, centrally scheduled examination. It will consist of multiple-choice questions, short answers questions and case studies.	
CRITERIA:	No.	Learning Outcome assessed
	1	Explain the role of microorganisms in human health and disease 1
	2	Compare and contrast bacterial, viral, and parasitic infections, and concepts of treatment and control. 2
	3	Apply skills to detect, isolate, identify and report a range of microorganisms. 3
	4	Predict how B and T lymphocytes, and antigen and antibodies contribute to immune responses in health and disease. 4
GENERIC SKILLS:	Communication, Problem solving, Organisation, Applying technologies	

All - Assessment Task 3b: Microbiology Competency Assessment

GOAL:	To assess practical skills in clinical microbiology.	
PRODUCT:	Practical / Laboratory Skills, and Written Piece	
FORMAT:	This will be conducted at the end of the intensive laboratory 2 classes.	
CRITERIA:	No.	Learning Outcome assessed
	1	Explanation of the role of microorganisms in human health and disease. 1
	2	Comparison and contrast of bacterial, viral, and parasitic infections, and concepts of treatment and control. 2
	3	Application of skills to detect, isolate, identify and report a range of microorganisms. 3
GENERIC SKILLS:	Problem solving, Organisation, Applying technologies, Information literacy	

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

To successfully complete the UB001 Bachelor of Medical Laboratory Science (Pathology) and meet the accreditation requirements of AIMS, UB001 students enrolled in MLS200 must attend and participate in all on-campus practical classes. Practical classes will be scheduled in the first 4 weeks of semester plus a two-week laboratory class intensive in Session 5 (Weeks 26 and 27). The final assessments in MLS200 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. 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