COURSE OUTLINE

LFS262 Medical Microbiology

School: School of Science, Technology and Engineering

2025 | 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

Medical microbiology describes the relationships between microbes and our lives including harmful as well as beneficial effects of microorganisms. You will learn about infectious diseases, their aetiology and clinical manifestation, transmission routes, treatment/techniques in detection and identification of pathogenic microorganisms. The course investigates microbial diseases of the various systems with practical sessions on isolation and identification procedures of pathogenic microorganisms in clinical samples and their antibiotic susceptibility.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – asynchronous learning materials	2hrs	Week 1	13 times
Tutorial/Workshop 1 – on campus tutorial/workshop	1hr	Week 1	13 times
Laboratory 1 – This is an intensive practical classes during the semester break.It consists of 4 successive days (3 hours each). On campus laboratory. Due to converting labs to PC2, these labs will be held during the mid semester break. .	12hrs	Break week	Once Only
Laboratory 2 – There will be an extra one hours catch up to discuss the results of practical on day 4	1hr	Break week	Once Only

1.3. Course Topics

Introduction to Pathogens and Communicable Diseases 1-Principles of disease and epidemiology, nosocomial Infections and outbreak investigation, 2- Microbial mechanism of pathogenicity (how microbes enter a host and damage host cells) 3-Innate immunity (Non-specific defences of the host against pathogens), 4-Antimicrobial drugs (antibiotics, their spectrum), **Human diseases caused by microorganisms** 5-Microbial diseases of the skin and eye 6- Infections of the upper respiratory system, 7-Infections of the lower respiratory system, 8-Microbial diseases of the digestive system, 9-Microbial diseases of the Urinary and Reproductive systems, 10-Microbial diseases of the nervous system 11-Microbial diseases of cardiovascular and lymphatic system

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 On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Analyse and evaluate data regarding pathogens, their pathogenic attributes, and host's immune responses to infectious diseases as well as mechanism of action and function of antibiotics	Knowledgeable
2	List the aetiology of the most communicable diseases and their products	Knowledgeable
3	Describe the rationale and the basis of strategies that are used for prevention, control and treatment of infectious diseases.	Empowered
4	Identify and apply techniques that are used for laboratory isolation, identification and characterisation of pathogenic microorganisms	Empowered
5	Describe major mechanisms of interactions between microbes and human host and the types of diseases caused by microorganisms	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

MBT263 or LFS261 or MEP263

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

MEP252 or MEP253 or MBT253

5.4. Specific assumed prior knowledge and skills (where applicable)

General knowledge about the structure of microorganisms, their growth requirement as well as basic skills in cultivation and aseptic transfer of bacteria

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

The course will include an early formative assessment on week four. The formative quiz will be based on materials covered during the first three weeks and discussed in detail in tutorial classes. Responses to early quiz will be peer reviewed to evaluate students' academic progress, including identifying the need for additional support.

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	1a	Quiz/zes	Individual	0%	20 minutes	Week 4	In Class
All	1b	Examination - not Centrally Scheduled	Individual	25%	1 hour	Week 7	In Class
All	1c	Examination - not Centrally Scheduled	Individual	25%	1 hour	Week 10	In Class
All	2	Oral	Group	20%	12 minutes	Refer to Format	In Class
All	3	Examination - Centrally Scheduled	Individual	30%	2 hours	Exam Period	Exam Venue

All - Assessment Task 1a: Early quiz

GOAL:	To give you feedback and assess your ability to describe how an infectious disease develops and spreads in the community and a hospital setting and how the science of epidemiology helps to identify the routes of spreading infection.
PRODUCT:	Quiz/zes
FORMAT:	A 20 minute, in class multiple choice quiz
CRITERIA:	

No.		Learning Outcome assessed
1	Correctly describing how pathogens enter the body, cause infection and spread in the community or in the hospital and identify the vectors and the mechanism of transmission of infectious diseases.	2

GENERIC SKILLS:	

All - Assessment Task 1b: Mid Semester exam

GOAL:	To assess your ability to understand the basic mechanisms by which microbes interact with the host, host immune response towards microbial infection, routes of disease transmission, principal of antimicrobial agents and their mechanisms of actions
PRODUCT:	Examination - not Centrally Scheduled
FORMAT:	A 1 hour, in class multiple choice questions
CRITERIA:	

No.		Learning Outcome assessed
1	Accurately describing major mechanisms of interactions between microbes and human host.	1
2	Describing the rationale and the basis of strategies that are used for prevention, control and treatment of infectious diseases.	3
3	Correctly identify the aetiology of common communicable diseases and their products.	4

GENERIC SKILLS:	Applying technologies

All - Assessment Task 1c: Practical lab exam

GOAL:	To assess your knowledge of the theory that underpins the practical procedures required for performing and processing microbiological tests, safely and professionally, in a clinical Microbiology laboratory. .
PRODUCT:	Examination - not Centrally Scheduled
FORMAT:	Format: This 1 hour assessment will be in the format of short essay and multiple choice questions

CRITERIA:

No.		Learning Outcome assessed
1	Evidence of applying microbiological knowledge to laboratory techniques that are commonly used for isolation, identification and characterisation of pathogenic microorganisms	4

GENERIC SKILLS:

All - Assessment Task 2: Oral presentation

GOAL:	To assess your ability to professionally introduce a selected infectious disease to a scientific audience and within a time limit
PRODUCT:	Oral
FORMAT:	You will be working as a team (2-4 per team). Presentation will be in the format of a power point (with or without video clip) describing the aetiology of the disease, clinical manifestation of the disease, epidemiology and routes of transmission, laboratory identification, treatment and prevention of the disease, all within 12 minutes. Students may also choose to describe the theory and practice of automated microbial identification systems. A list of topics to be chosen by students for their oral presentation will be presented to student on Canvas on week 1. All members of the team should contribute to the oral presentation equally and present equally. Presentations to occur in Weeks 11 and 12

CRITERIA:

No.		Learning Outcome assessed
1	Scientific contents of the presentation: 1- Comprehensive description of the aetiology of the disease, its identification procedure and clinical manifestation of the disease,	1 2
2	2-Description of the disease epidemiology and rational strategies for prevention, control and treatment Student groups that choose to talk about automated microbial identification system,	3
3	can use video clips provided by the supplier to support their presentation but the main criteria for assessing their presentation will be their demonstrated understanding of the theory and practice of the system.	4
4	3- Quality of presentation including visual and oral communication	4
5	4- Evidence of collaboration between the team and organisation of presentation	5

GENERIC SKILLS:

All - Assessment Task 3: Final exam

GOAL:	To be able to describe major mechanisms of interactions between microbes and human host the rationale and the basis of strategies that are used for prevention, control and treatment of infectious disease.
PRODUCT:	Examination - Centrally Scheduled
FORMAT:	The exam will be based on the materials covered in course as described in the prescribed text book (between weeks 7 and 13). The exam questions will be a combination of multiple choice, fill-in and short answer questions and will be during the examination period at the end of semester for 2 hours.
CRITERIA:	

No.		Learning Outcome assessed
1	Accurately describe major mechanisms of interactions between microbes and human host	1 5
2	Describe the rationale and the basis of strategies that are used for prevention, control and treatment of infectious diseases	3
3	Correctly list the aetiology of common communicable diseases and their products	2

GENERIC SKILLS:	

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

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
Required	Gerard J. Tortora, Berdell R. Funke, Christine L. Case	0	MICROBIOLOGY	13th Edition	n/a

8.2. Specific requirements

It is the responsibility of students to attend practical classes on time and have lab coat and proper clothing e.g. proper shoes. Students who do not have lab coat or proper shoes will not be allowed to enter the practical lab classes.

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

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