



Course Outline

Code: LFS262

Title: Medical Microbiology

School of:	Health & Sport Sciences
Teaching Session:	Semester 2
Year:	2020
Course Coordinator:	A/Prof. Mohammad Katouli Tel: 5430 2845 Email: mkatouli@usc.edu.au
Course Moderator:	Dr David McMillan, Tel: 545658523, E-mail: David.mcmillan@usc.edu.au

Please go to the USC website 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. This includes harmful as well as beneficial effects of microorganisms. You will learn about the infectious diseases, their aetiology and clinical manifestation, routes of transmission, treatment and techniques in detection and identification of pathogenic microorganisms. The course investigates microbial diseases of the skin, digestive tract, respiratory, urinary, reproductive, nervous and cardiovascular systems. The practical sessions of the course focuses on the isolation and identification procedures of pathogenic microorganisms in clinical samples and their antibiotic susceptibility.

1.2 Course topics

The course covers microbial diseases of the skin, digestive tract, respiratory, urinary, reproductive, nervous and cardiovascular systems.

2. What level is this course?

200 level Developing - Applying broad and/or deep knowledge and skills to new contexts. May require pre-requisites and introductory level knowledge/skills. Normally undertaken in the 2nd or 3rd 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?

Specific Learning Outcomes On successful completion of this course you should be able to:	Assessment Tasks You will be assessed on the learning outcome in task/s:	Graduate Qualities or Professional Standards mapping Completing these tasks successfully will contribute to you becoming:
Identify, describe and analyse the beneficial and deleterious effects of natural microbiota of each body site.	1a (Early quiz), 1b (Mid-semester exam)	Knowledgeable.
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	Task 1b (Mid-semester exam)	Knowledgeable.
List the aetiology of the most communicable diseases and their products	Task 3 (Final exam)	Knowledgeable.
Describe the rationale and the basis of strategies that are used for prevention, control and treatment of infectious diseases.	Task 3 (Final exam)	Empowered.
Identify and apply techniques that are used for laboratory isolation, identification and characterisation of pathogenic microorganisms	Task 2 (Practical lab exam)	Empowered.
Describe major mechanisms of interactions between microbes and human host and the types of diseases caused by microorganisms	Task 3 (Final exam)	Knowledgeable

5. Am I eligible to enrol in this course?

Refer to the [USC Glossary of terms](#) for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1 Enrolment restrictions

Nil

5.2 Pre-requisites

MBT263 or LFS261 or MEP263

5.3 Co-requisites

Nil

5.4 Anti-requisites

MEP252 or MEP253 or MBT253

5.5 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 – 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 lectures 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

Task No.	Assessment Tasks	Individual or Group	Weighting %	What is the duration / length?	When should I submit?	Where should I submit it?
1a	Early quiz	Individual	Formative	30 minutes	Week 4	Black board
1b	Mid Semester exam	Individual	30%	2 hour	Week 7	Online, Black board test tool
2	Practical lab exam	Individual	30%	2 hour	Week 10)	Online, Black board test tool
3	Final exam	Individual	40%	2 hours	End of semester	Centrally scheduled online exam
			100%			

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 source and routes of spreading infection.
Product:	Quiz
Format:	Multiple choice quiz
Criteria:	Correctly identify how pathogens enter the body, cause infections, and spread in the community or in the hospital and identify the vectors and the mechanism of transmission of infectious diseases. Accurately identifying the importance of normal microbiota and immune system of the host to combat pathogens

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:	Centrally scheduled online exam
Format:	Multiple choice and short answer questions
Criteria:	Accurately describing major mechanisms of interactions between microbes and human host. Describing the rationale and the basis of strategies that are used for prevention, control and treatment of infectious diseases. Correctly identify the aetiology of common communicable diseases and their products.

Assessment Task 2: 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:	Practical lab exam
Format:	This one- hour assessment will be in the format of short essay and multiple-choice questions

Criteria:	Evidence of applying microbiological knowledge to laboratory techniques that are commonly used for isolation, identification, and characterisation of pathogenic microorganisms
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Assessment Task 3: Final exam

Goal:	To assess your ability to identify the aetiology of infectious diseases and their characteristics as well as describing clinical manifestation, routes of transmission and treatment of infectious diseases of the human body systems
Product:	Exam
Format:	The exam will be based on the materials covered in lectures as described in the prescribed textbook 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:	1- Accurately describe major mechanisms of interactions between microbes and human host 2- Describe the rationale and the basis of strategies that are used for prevention, control and treatment of infectious diseases 3- Correctly list the aetiology of common communicable diseases and their products

7. What are the course activities?

7.1 Directed study hours

The directed study hours listed here are a portion of the workload for this course. 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. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

This course will be delivered via technology-enabled learning and teaching. All lectures/workshops will remain in this mode for Semester 2 2020. When government guidelines allow, and if practical, students that elected on-campus study via the class selection process will be advised via Blackboard if/when on-campus sessions can resume.

Location:	Directed study hours for location:
USC Sunshine Coast	4 hours/week (i.e. 2 x 1 hour lectures, one hour tutorial and 1 hour practical/week*) ** IMPORTANT: See Blackboard for specific details about course delivery.

7.2 Course content

Week # / Module #	What key concepts/content will I learn?
	Each topic is presented as 2 x 1 hour lecture/week
W1	Introduction to Pathogens and Communicable Diseases Principles of disease and epidemiology
W2	Introduction to Pathogens and Communicable Diseases Nosocomial Infections and outbreak investigation
W3	Microbial mechanism of pathogenicity (How microbes enter a host and damage host cells)
W4	Innate immunity (Non-specific defences of the host against pathogens)
W5	Antimicrobial drugs (Antimicrobial drugs and their spectrum)
W6	Human diseases caused by microorganisms

	(Microbial diseases of the skin and eye)
W7	1-Mid-semester exam 2-Human diseases caused by microorganisms (Infections of the respiratory system- part 1)
W8	(Infections of the respiratory system- part 2)
W9	(Microbial diseases of the digestive system-part 1)
W10	Microbial diseases of the digestive system -part 2)
W11	Microbial diseases of the Urinary and Reproductive systems
W12	(Microbial diseases of the nervous system)
W13	(Diseases of cardiovascular and lymphatic system

8. What resources do I need to undertake this course?

Please note that course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Blackboard site. Please log in as soon as possible.

8.1 Prescribed text(s)

Please note that you need to have regular access to the resource(s) listed below as they are required:

Author	Year	Title	Publisher
Tortora G.J, Funke B.R. and Case C.L.	2016	Microbiology, an introduction	Pearson Global Edition. 12 th edition

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. Risk management

Students must read and take the online risk assessment test before starting practical classes and hand a print out of the successful risk assessment test to the course coordinator

It is your responsibility as a student 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. It is also your responsibility to familiarise yourself with the University's general health and safety principles by reviewing the [online Health Safety and Wellbeing training module 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 Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

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%
- b) The course is graded using the Standard Grading scale
- c) You have not failed an assessment task in the course due to academic misconduct

10.3 Assessment: Submission penalties

Late submission of assessment tasks will be penalised at the following maximum rate:

- 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 and supply the required documentation to negotiate an outcome.

10.4 Study help

In the first instance, you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Academic Skills Advisers. To book an appointment or find a drop-in session go to [Student Hub](#).

Contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au

10.5 Wellbeing Services

Student Wellbeing Support Staff are available to assist on a wide range of personal, academic, social and psychological matters to foster positive mental health and wellbeing for your success. Student Wellbeing is comprised of professionally qualified staff in counselling, health and disability Services.

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, mental health issue, learning disorder, injury or illness, or you are a primary carer for someone with a disability, [AccessAbility Services](#) can provide assistance, advocacy and reasonable academic adjustments.

To book an appointment with either service go to [Student Hub](#), email studentwellbeing@usc.edu.au or accessability@usc.edu.au or call 07 5430 1226

10.6 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
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website:

<http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching>

10.7 General Enquiries

In person:

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

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au