LMED28004 *Infectious Diseases 1*

Term 2 - 2023

Profile information current as at 29/04/2024 06:01 pm

All details in this unit profile for LMED28004 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

On completion of this unit, you will be able to identify and discuss the clinical significance of viruses, fungi and parasites causing human disease. You will investigate the morphological characteristics, epidemiology, laboratory identification of these microorganisms and will be able to debate causes of mycological, parasitic and viral infectious diseases. You will discuss the life cycle of important parasites and their relevance to disease control. You will be able to interpret basic serological tests for the detection of human pathogenic viruses. Problem-solving and decision making skills will be developed through the use of authentic case studies. Skill development in instrument calibration, best practice measurement, interpretation of test results and test quality control monitoring will occur through practical exercises. You will be required to attend a residential school on the Rockhampton campus in order to promote the development of unit learning outcomes. The residential school may be scheduled outside of the term of offering of the unit.

Details

Career Level: *Postgraduate*
Unit Level: *Level 8*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

PrerequisiteEnrolment in Master of Laboratory Medicine.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 2 - 2023

- Melbourne
- Mixed Mode
- Rockhampton

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:
Click here to see your Residential School Timetable.

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Written Assessment**
Weighting: 30%
2. **Oral Examination**
Weighting: 50%
3. **Presentation**
Weighting: 20%
4. **Laboratory/Practical**
Weighting: Pass/Fail

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Discuss the clinical significance and laboratory detection of the principal bacterial, viral, fungal and parasitic pathogens of each of the human body systems
2. Evaluate and interpret different testing methods used in the detection and monitoring of infectious diseases caused by bacteria, viruses, fungi and parasites
3. Evaluate and interpret different testing methods used in the determination of antimicrobial susceptibility of bacteria, viruses, fungi and parasites
4. Demonstrate practical skills to identify and determine the antimicrobial susceptibility of pathogenic bacteria, viruses, fungi and parasites
5. Apply appropriate quality control processes for the practice of bacteriology, virology, mycology and parasitology.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level · ● Introductory Level · ● Intermediate Level · ● Graduate Level · ○ Professional Level · ○ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Oral Examination - 50%	●	●	●		
2 - Written Assessment - 30%			●	●	
3 - Laboratory/Practical - 0%				●	●
4 - Presentation - 20%	●	●	●		

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Knowledge	○	○	○	○	○
2 - Communication	○	○	○	○	○
3 - Cognitive, technical and creative skills	○	○	○	○	○
4 - Research					
5 - Self-management					
6 - Ethical and Professional Responsibility				○	○
7 - Leadership					
8 - Aboriginal and Torres Strait Islander Cultures					

Textbooks and Resources

Textbooks

LMED28004

Prescribed

Bailey and Scott's Diagnostic Microbiology
15th edition (2021)
Authors: Patricia M Tile
Elsevier
St Louis , Missouri , USA
ISBN: 9780323354820
Binding: Paperback

View textbooks at the CQUniversity Bookshop

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: Vancouver
For further information, see the Assessment Tasks.

Teaching Contacts

William Deasy Unit Coordinator
w.deasy@cqu.edu.au
Melissa Swinson Unit Coordinator
m.chalada@cqu.edu.au

Schedule

Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Host/Pathogen Interactions Gram Positive Cocci	Bailey and Scott's Diagnostic Microbiology Chapters 1, 2, 10, 13 and 14 (15th Ed)	Rockhampton Lecture and zoom tutorial Introduction to the subject content, learning materials and assessments

Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Aerobic/Facultative Gram Positive Bacilli Filamentous Gram Positive Bacilli Environmental Gram Negative Bacilli	Bailey and Scott's Diagnostic Microbiology Chapters 15,16, 17 and 18, 21, 25, 29, 31, 32, 33, 34, 35, 36, and 37 (15th Ed)	Live/recorded Lecture and Zoom Tutorial on week 1 content

Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Enterobacteriaceae	Bailey and Scott's Diagnostic Microbiology Chapter 19 (15th Ed)	Live/recorded Lecture and Zoom Tutorial on week 2 content

Week 4 - 31 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
Gram negative cocci - *Moraxella catarrhalis* and Neisseriaceae Fastidious Gram negative Bacilli	Bailey and Scott's Diagnostic Microbiology Chapters 39, 40 and 41 (15th Ed)	Live/recorded Lecture and Zoom Tutorial on week 3 content

Week 5 - 07 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Anaerobes Spirochaetes, Mycoplasmas & Ureaplasma, Chlamydiae and Rickettsiae	Bailey and Scott's Diagnostic Micrbiology Chapters 41, 42, 43, 44, and 45 (15th Ed)	Live/recorded Lecture and Zoom Tutorial on week 4 content

Vacation Week - 14 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Self-guided study		

Week 6 - 21 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Mycobacteria Viruses Prions	Bailey and Scott's Diagnostic Microbiology Chapters 45, 64, 65, 66 (15th Edition)	Live/recorded Lecture and Zoom Tutorial on week 5 content

Week 7 - 28 Aug 2023

Module/Topic	Chapter	Events and Submissions/Topic
Mycology (Fungi) Parasites	Bailey and Scott's Diagnostic Microbiology Chapter 46-57, 58-63 (15th Edition)	Live/recorded Lecture and Zoom Tutorial on week 6 content **Molecular Techniques in Pathology** Due: Week 7 Monday (28 Aug 2023) 5:00 pm AEST

Week 8 - 04 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Skin and Soft Tissue Infections Eye, ear & respiratory tract infections	Bailey and Scott's Diagnostic Microbiology Chapters 68, 69, 71 &75 (15th Edition)	Live/recorded Lecture and Zoom Tutorial on week 7 content

Week 9 - 11 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Renal/Urinary + Obstetric & Genital infections	Bailey and Scott's Diagnostic Microbiology Chapters 72, 73 and 74 (15th Ed)	Live/recorded Lecture and Zoom Tutorial on week 8 content

Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Gastrointestinal Infection Vector Borne Infections & Zoonotic Infections	Bailey and Scott's Diagnostic Microbiology Chapter 57, 65, 67 & 74 (15th edition)	Live/recorded Lecture and Zoom Tutorial on week 9 content

Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
Infections of the Central Nervous System The immunocompromised host	Bailey and Scott's Diagnostic Microbiology Chapter 70 (15th Edition)	Live/recorded Lecture and Zoom Tutorial on week 10 content

Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic

Testing for antimicrobial susceptibility Super bugs Antimicrobials		Live/recorded Lecture and Zoom Tutorial on week 11 content **Poster Presentation** Due: Week 12 Friday (6 Oct 2023) 5:00 pm AEST

Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
		Live/recorded Lecture and Zoom Tutorial on week 12 content **Oral Assessment - Presentation** Due: Review/Exam Week Monday (9 Oct 2023) 9:00 am AEST

Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Your unit coordinator for LMED28004 is Dr William Deasy. You can contact me using the forum on the unit's Moodle site or alternatively through email (w.deasy@cqu.edu.au) or on 07 4930 6365. The forum for this unit is continuously monitored and you can expect a response within 24 hours of posting your question.
Tutorials will be run (via Zoom) by Associate Professor Brenda Govan.

Assessment Tasks

1 Molecular Techniques in Pathology

Assessment Type
Written Assessment

Task Description
Written assessment on rapid diagnostic assays in clinical microbiology
This assessment is an opportunity to research in further detail the application of assays based on the polymerase chain reaction (PCR) and matrix-assisted laser desorption ionization time of flight mass spectrometry (MALDI-TOF-MS) for specific bacterial pathogen detection in terms of diagnostic technology.
The application of these two assays to the clinical microbiology laboratory has revolutionized diagnosis in terms of speed and enhanced specificity. In this assessment you will choose one group of clinically significant bacteria for example, Staphylococci, Streptococci, Salmonella, E. coli, Pseudomonas (A complete list will be available on the Moodle site) and complete a 3000 word (+/- 10%) word literature review on the application of PCR and MALDI-TOF technology in detection of these pathogens.

You will also be required to provide a background on the pathogenecity of your chosen bacterium and on the technical development of PCR and MALDI-TOF.

Assessment Due Date
Week 7 Monday (28 Aug 2023) 5:00 pm AEST
Please submit this via the assessment dropbox on Moodle.

Return Date to Students
Week 9 Friday (15 Sept 2023)
Return will be online via Moodle with feedback available Turnitin feedback studio.

Weighting
30%

Minimum mark or grade
50%

Assessment Criteria
You will be required to provide a background on the pathogenicity/virulence of your chosen bacterium, PCR and MALDI-TOF and on the technical development of these techniques.
To achieve this you will need to:
1: Choose a specific bacterium from a list of clinically relevant bacteria which will be available on the Moodle site. If you are unsure of the suitability of your choice for this assessment, please consult with the unit coordinator.
2: Research the literature relevant to clinical diagnosis of your chosen bacterium. Scientific journal articles should form the basis for this literature search.

Referencing Style

- Vancouver

Submission
Online

Submission Instructions
Please submit via the assessment dropbox on Moodle.

Learning Outcomes Assessed

- Evaluate and interpret different testing methods used in the determination of antimicrobial susceptibility of bacteria, viruses, fungi and parasites
- Demonstrate practical skills to identify and determine the antimicrobial susceptibility of pathogenic bacteria, viruses, fungi and parasites

2 Oral Assessment - Presentation

Assessment Type
Oral Examination

Task Description
You will design and record a video presentation for assessment. You will be required to compare and contrast two pathogens which infect a similar tissue or organ in terms of the laboratory techniques used for their detection together with a details relating to transmission, pathogenesis and anti-microbial treatments/resistance of these pathogens.
You must choose two different pathogen types, for example a virus and a parasite, a fungus and a parasite, or a prion and a bacteria. You are not limited to these combinations.
Your presentation should be no longer than 10 minutes.

Assessment Due Date
Review/Exam Week Monday (9 Oct 2023) 9:00 am AEST
Powerpoints to be uploaded in moodle via the assessment dropbox and the unlisted video uploaded to Youtube.

Return Date to Students
Exam Week Friday (20 Oct 2023)
Marks will be released at certification of grades. Feedback on slides will be provided in Turnitin feedback studio.

Weighting
50%

Minimum mark or grade
50%

Assessment Criteria
In order to achieve this you will need to.
1: Identify two suitable pathogens which infect the same tissue type or organ. If you are unsure on the suitability of your choice please consult the unit coordinator for guidance.
2: Research the literature on current diagnostic techniques for your chosen pathogens and then create a Power Point presentation comparing and contrasting the approaches used and also providing information on the pathogenesis and treatment of the chosen pathogen.
3: You will be required to reference at least 16 scientific journal articles.
4: You will then record yourself presenting your slides and upload it to youtube as an unlisted video

Referencing Style

- Vancouver

Submission
Online

Submission Instructions
Powerpoints to be uploaded in moodle via the assessment dropbox and the unlisted video uploaded to Youtube.

Learning Outcomes Assessed

- Discuss the clinical significance and laboratory detection of the principal bacterial, viral, fungal and parasitic pathogens of each of the human body systems
- Evaluate and interpret different testing methods used in the detection and monitoring of infectious diseases caused by bacteria, viruses, fungi and parasites
- Evaluate and interpret different testing methods used in the determination of antimicrobial susceptibility of bacteria, viruses, fungi and parasites

3 Poster Presentation

Assessment Type
Presentation

Task Description
You will be assigned to groups at the beginning of the term, then working together (groups of four members) you will produce a scientific poster that builds on the work you carried out for your written work from assessment 1. You will discuss advances in molecular detection techniques for a particular bacteria when compared to standard phenotypic identification techniques. Your focus will be on laboratory techniques used for their detection together with a description of transmission, pathogenesis and treatment of these pathogens.

Assessment Due Date
Week 12 Friday (6 Oct 2023) 5:00 pm AEST
Posters will be submitted via the Assessment dropbox in Moodle for printing prior to the Residential school. Posters will be presented at the Residential School on the the last day of the Microbiology week.

Return Date to Students

You will be assessed on the last day of the Microbiology residential school, with the marks will be uploaded immediately after the Residential school

Weighting
20%

Assessment Criteria
Your poster will be assessed on a number of criteria including:

- Design and appearance
- Information content relating to Transmission, pathogenicity, virulence factors, etc.
- Contribution to the group effort
- Ability to answer questions relating to your poster.

Referencing Style

- Vancouver

Submission
Online Group

Submission Instructions
Submission will be via assessment dropbox on Moodle

Learning Outcomes Assessed

- Discuss the clinical significance and laboratory detection of the principal bacterial, viral, fungal and parasitic pathogens of each of the human body systems
- Evaluate and interpret different testing methods used in the detection and monitoring of infectious diseases caused by bacteria, viruses, fungi and parasites
- Evaluate and interpret different testing methods used in the determination of antimicrobial susceptibility of bacteria, viruses, fungi and parasites

4 Practical Assessment

Assessment Type
Laboratory/Practical

Task Description
The laboratory practical exercise is an opportunity to learn and perform clinical diagnostic procedures in

Bacteriology,Virology,
Mycology and Parasitology and compliment the theoretical knowledge of diagnostic microbiology. The residential school will provide valuable practical experience in techniques currently performed in diagnostic clinical microbiology laboratories.
The laboratory practical assessment will comprise of laboratory based exercises which will be completed during the Residential School period. You will be assessed for competency in Microbiological culture, staining and identification techniques during the Practical.

Assessment Due Date

You will be assessed for competency in Microbiological culture, staining and identification techniques during the Practical.

Return Date to Students

Results will be uploaded immediately following the residential school

Weighting
Pass/Fail

Assessment Criteria
You will be assessed on your competency while carrying out practical tasks during the residential school. This assessment is Pass/fail.

Referencing Style

- Vancouver

Submission
No submission method provided.

Learning Outcomes Assessed

- Demonstrate practical skills to identify and determine the antimicrobial susceptibility of pathogenic bacteria, viruses, fungi and parasites
- Apply appropriate quality control processes for the practice of bacteriology, virology, mycology and parasitology.

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem