



BMSC13021 *Clinical Diagnostic Microbiology*

Term 2 - 2024

Profile information current as at 05/09/2024 02:42 pm

All details in this unit profile for BMSC13021 have been officially approved by CQU University 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

In this unit you will build upon the foundational knowledge gained in microbiology and apply it in a clinical context. You will explore the role of commensal flora in maintaining health and the role of bacterial, fungal, viral, protozoal and helminthic pathogens in disease and learn about their detection, identification, treatment and management. You will also consider new and emerging technologies and you will also explore the concept of 'One Health' while considering emerging diseases, pandemics and zoonoses as well as the emergence of antimicrobial resistance.

Details

Career Level: *Undergraduate*

Unit Level: *Level 3*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Pre-requisite: MBI019012

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 - 2024

- Bundaberg
- 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).

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 Undergraduate 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: 20%

2. **Case Study**

Weighting: 30%

3. **Laboratory/Practical**

Weighting: Pass/Fail

4. **Online Test**

Weighting: 50%

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, laboratory detection, treatment and management of commensal flora, pathogens and opportunistic pathogens of each of the human body systems
2. Appraise the use of standard and emerging techniques for detecting and identifying bacteria, viruses, fungi and parasites causing human disease
3. Evaluate the use of antimicrobial chemotherapeutic agents and vaccines in the treatment and prevention of infectious diseases caused by bacteria, viruses, fungi and parasites
4. Discuss the mechanisms of antimicrobial resistance in bacteria, viruses, fungi and parasites
5. Compare and contrast emerging infectious diseases, including definitions, factors leading to disease emergence, monitoring and intervention strategies.

Alignment of Learning Outcomes, Assessment and Graduate Attributes



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Written Assessment - 20%	•		•		
2 - Case Study - 30%				•	•
3 - Laboratory/Practical - 0%		•			
4 - Online Test - 50%	•	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•	•	•	•
2 - Problem Solving	•	•		•	
3 - Critical Thinking	•	•	•		•
4 - Information Literacy		•		•	•
5 - Team Work					
6 - Information Technology Competence			•		
7 - Cross Cultural Competence					

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
8 - Ethical practice	•		•	•	•
9 - Social Innovation					
10 - Aboriginal and Torres Strait Islander Cultures					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
1 - Written Assessment - 20%	•	•	•					•		
2 - Case Study - 30%	•	•	•	•				•		
3 - Laboratory/Practical - 0%	•	•	•			•				
4 - Online Test - 50%	•	•	•	•				•		

Textbooks and Resources

Textbooks

BMSC13021

Supplementary

Bailey and Scott's Diagnostic Microbiology

15th edition (2021)

Authors: Patricia M Tile

Elsevier

St Louis , MO , USA

ISBN: 9780323354820

You may have already purchased this text in the previous unit, BMSC12011. Both eBook and paper copies can be purchased from the CQUni Bookshop here: [Bookshop](#)

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

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

Referencing Style

All submissions for this unit must use the referencing styles below:

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

For further information, see the Assessment Tasks.

Teaching Contacts

Maddie Higgins Unit Coordinator
m.j.higgins@cqu.edu.au

Schedule

Week 1 - 08 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Introduction, revision on microbial structure, function and taxonomy	1 and 2	

Week 2 - 15 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Colonisation vs infection vs disease	3	

Week 3 - 22 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Urogenital infections including STI's	73	

Week 4 - 29 Jul 2024

Module/Topic	Chapter	Events and Submissions/Topic
Respiratory infections including ENT infections	69	

Week 5 - 05 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Gastrointestinal and biliary infections	74	

Vacation Week - 12 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 19 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Skin, soft tissue, joint and bone infections	75	Assessment Task 1: Written Assessment Due: Week 6 Friday (23 Aug 2024) 5:00 pm AEST

Week 7 - 26 Aug 2024

Module/Topic	Chapter	Events and Submissions/Topic
Blood borne infections including lymphatics and sepsis	67	

Week 8 - 02 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Central nervous system including ocular infections	70 and 71	

Week 9 - 09 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Zoonoses and 'One Health'	3	Assessment 2: Case Study Due: Week 9 Friday (13 Sept 2024) 5:00 pm AEST

Week 10 - 16 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Emerging and re-emerging infections, 'exotic infections'	3	

Week 11 - 23 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Epidemiology, epidemics and pandemics	3	

Week 12 - 30 Sep 2024

Module/Topic	Chapter	Events and Submissions/Topic
Revision		End of Term Online Test Due: Week 12 Friday (4 Oct 2024) 8:00 pm AEST

Review/Exam Week - 07 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 14 Oct 2024

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Your Unit Coordinator for BMSC13021 Clinical Diagnostic Microbiology is Maddie Higgins. You can contact me using the forum on the unit Moodle page, alternatively by email (m.j.higgins@cqu.edu.au), or phone on (07) 4150 7017. The forum for this unit is regularly monitored and you can expect a response within 24 hours of posting your question.

Each week you will be expected to complete:

- 2-hour lecture (face to face)
- 1-hour tutorial (face to face)
- 3 - 5 hours of self-directed study
- 3 - 5 hours of assessment preparation

Online sessions will be facilitated via Zoom with links provided on the unit Moodle page. Recordings of lectures and tutorials will be made available on the unit Moodle page.

This unit includes a Compulsory Residential School, and your attendance is required to pass the unit.

Assessment Tasks

1 Assessment Task 1: Written Assessment

Assessment Type

Written Assessment

Task Description

For this assessment task, you will be required to select an infectious disease and identify the causative organism(s), their isolation and laboratory identification and their treatment, management and prevention.

Assessment Due Date

Week 6 Friday (23 Aug 2024) 5:00 pm AEST

Return Date to Students

Week 8 Friday (6 Sept 2024)

Weighting

20%

Minimum mark or grade

50%

Assessment Criteria

- Title
- Introduction (background and direction of the selected case study)
- What is the disease?
- What is/are the causative organism(s)?
- How are they isolated and identified in the laboratory?
- How are they treated and/or managed?
- How can these diseases be prevented?
- Conclusion summarising the key points of the discussion
- Reference list of resources must be included as well as in-text citations
- Professional presentation, adherence to formatting, academic style requirements and word count

Generative AI

In developing your assignment, you should consult peer-reviewed journal articles and referenced textbooks. Extensive use of non-peer-reviewed sources of information is strongly discouraged. Students are permitted to use Generative AI for the assessment in the following ways:

- Developing literature search strategies
- Guidance on developing arguments
- Assistance in formatting and grammar

If Generative AI is used in any way, it must be cited as per the CQU Guidelines (Academic Learning Centre). The following statement must be completed and included on the front page of the uploaded assessment: "I have used (insert technology) to (insert how you used this) in accordance with the requirements of this unit. The reason I used this was to (explain why you used it). The details of how I used it as (insert how). I hereby declare that the submission is an appropriate representation of my individual skills and abilities to meet the requirements of the task/s."

As per academic writing requirements and assessment criteria; citations of information should be of the primary source (i.e statistics returned by AI must be fact-checked and referenced from their original source as well as the AI source). Failure to cite primary sources as well as AI sources could be considered breach of academic integrity. Your use of Generative AI must be clearly outlined in an appendix including the prompt used and Generative AI response. Failure to include an appendix may result in academic integrity investigation.

Please refer to the Assessment tab on the unit Moodle page for a full marking rubric.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

Online

Submission Instructions

Through Moodle

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Ethical practice

Learning Outcomes Assessed

- Discuss the clinical significance, laboratory detection, treatment and management of commensal flora, pathogens and opportunistic pathogens of each of the human body systems
- Evaluate the use of antimicrobial chemotherapeutic agents and vaccines in the treatment and prevention of infectious diseases caused by bacteria, viruses, fungi and parasites

2 Assessment 2: Case Study

Assessment Type

Case Study

Task Description

For this task, you will be required to build on Assessment Task 1. Specifically, you will be required to select a case study or series of case studies that demonstrate how the disease(s) is/are treated and managed and how this may be compromised by the emergence of antimicrobial resistance and/or the emergence of novel pathogens. This assessment task will involve application of knowledge related to "One Health" and how changes in environment impacts on infectious disease emergence and spread.

Assessment Due Date

Week 9 Friday (13 Sept 2024) 5:00 pm AEST

Return Date to Students

Week 11 Friday (27 Sept 2024)

Weighting

30%

Minimum mark or grade

50%

Assessment Criteria

- Title
- Introduction (background and direction of the selected case study)
- What is the current situation?
- What are the strengths, weaknesses, and challenges of the current approach/s?
- How will the weaknesses and challenges potentially impact on healthcare in the future?
- What are possible solutions to meet these challenges?
- What impact would these solutions have on patients, health care and the local/global community?
- Conclusion summarising the key points of the discussion relevant to the case study
- Reference list of resources must be included as well as in-text citations
- Professional presentation, adherence to formatting, academic style requirements and word count

Generative AI

In developing your assignment, you should consult peer-reviewed journal articles and referenced textbooks. Extensive use of non-peer-reviewed sources of information is strongly discouraged. Students are permitted to use Generative AI for the assessment in the following ways:

- Developing literature search strategies
- Guidance on developing arguments
- Assistance in formatting and grammar

If Generative AI is used in any way, it must be cited as per the CQU Guidelines (Academic Learning Centre). The following statement must be completed and included on the front page of the uploaded assessment: "I have used (insert technology) to (insert how you used this) in accordance with the requirements of this unit. The reason I used this was to (explain why you used it). The details of how I used it as (insert how). I hereby declare that the submission is an appropriate representation of my individual skills and abilities to meet the requirements of the task/s."

As per academic writing requirements and assessment criteria; citations of information should be of the primary source (i.e statistics returned by AI must be fact-checked and referenced from their original source as well as the AI source). Failure to cite primary sources as well as AI sources could be considered breach of academic integrity. Your use of Generative AI must be clearly outlined in an appendix including the prompt used and Generative AI response. Failure to include an appendix may result in academic integrity investigation.

Please refer to the Assessment tab on the unit Moodle page for a full marking rubric.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

Online

Submission Instructions

Through Moodle

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Ethical practice

Learning Outcomes Assessed

- Discuss the mechanisms of antimicrobial resistance in bacteria, viruses, fungi and parasites
- Compare and contrast emerging infectious diseases, including definitions, factors leading to disease emergence, monitoring and intervention strategies.

3 Laboratory/Practical

Assessment Type

Laboratory/Practical

Task Description

For this task, you will be required to attend a Block Practical where practical laboratory skills will be developed to allow you to better understand how pathogenic organisms may be isolated and identified and how antimicrobial sensitivity testing is performed and its use in directing antimicrobial therapy. You will be required to document the results of the tests performed and to draw conclusions on the identification and treatment options for the pathogens isolated.

Assessment Due Date**Return Date to Students****Weighting**

Pass/Fail

Assessment Criteria

You will be assessed through a critical analysis and reflection of competencies completed progressively throughout the residential school.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

No submission method provided.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence

Learning Outcomes Assessed

- Appraise the use of standard and emerging techniques for detecting and identifying bacteria, viruses, fungi and parasites causing human disease

4 End of Term Online Test

Assessment Type

Online Test

Task Description

For this task, you will be required to complete an online open book test that will be conducted in Week 12.

The test will consist of three (3) parts:

Part A: 30 multiple choice questions (1 mark per question, total of 30 marks)

Part B: 20 short answer style questions (1.5 marks per question, total of 30 marks)

Part C: Choose two (2) out of a total of four (4) clinical case study style questions where you are presented with a brief patient history. You are required to suggest a provisional and differential diagnosis and answer questions about the case

or condition (20 marks per question, total of 40 marks)

The online test will remain open for 12 hours on Friday of Week 12, and once commenced, you will have a total of three (3) hours to complete the test.

Assessment Due Date

Week 12 Friday (4 Oct 2024) 8:00 pm AEST

Return Date to Students

Exam Week Friday (18 Oct 2024)

Weighting

50%

Minimum mark or grade

50%

Assessment Criteria

Questions will align with all of the Unit Learning Outcomes:

- 1 - Discuss the clinical significance, laboratory detection, treatment and management of commensal flora, pathogens and opportunistic pathogens of each of the human body systems.
- 2 - Appraise the use of standard and emerging techniques for detecting and identifying bacteria, viruses, fungi and parasites causing human disease.
- 3 - Evaluate the use of antimicrobial chemotherapeutic agents and vaccines in the treatment and prevention of infectious diseases caused by bacteria, viruses, fungi and parasites.
- 4 - Discuss the mechanisms of antimicrobial resistance in bacteria, viruses, fungi and parasites.
- 5 - Compare and contrast emerging infectious diseases, including definitions, factors leading to disease emergence, monitoring and intervention strategies.

The online quiz will cover questions relating to the causative organisms of infectious diseases, their pathophysiology, isolation and identification, treatment, management and prevention. You will also explore the emergence of new pathogens and antimicrobial resistance. This will require you to demonstrate your knowledge of risk factors, clinical manifestations and pathophysiology of various diseases as well as the isolation and identification of specific pathogens. The test will be designed to incorporate questions from the wide variety of content covered throughout the entire term, enabling you to demonstrate your depth of understanding of the content. The use of case studies will also provide contextualisation and authenticity to the test.

Referencing Style

- [Harvard \(author-date\)](#)
- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

Submission

Online

Submission Instructions

through Moodle

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Ethical practice

Learning Outcomes Assessed

- Discuss the clinical significance, laboratory detection, treatment and management of commensal flora, pathogens and opportunistic pathogens of each of the human body systems
- Appraise the use of standard and emerging techniques for detecting and identifying bacteria, viruses, fungi and parasites causing human disease
- Evaluate the use of antimicrobial chemotherapeutic agents and vaccines in the treatment and prevention of infectious diseases caused by bacteria, viruses, fungi and parasites
- Discuss the mechanisms of antimicrobial resistance in bacteria, viruses, fungi and parasites
- Compare and contrast emerging infectious diseases, including definitions, factors leading to disease emergence, monitoring and intervention strategies.

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