

Profile information current as at 07/05/2024 01:19 pm

All details in this unit profile for BMSC12011 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.

Corrections

Unit Profile Correction added on 08-08-18

Add to exam details "Closed Book Exam', 'Non Programmable calculator allowed, no text retrieval, silent only' 'Dictionary allowed, non electronic, concise, direct translation only (dictionary must not contain any notes or comments)'

General Information

Overview

This unit will provide you with evidence based learning and practice to maximise your diagnostic capabilities for the accurate detection, identification and management of infectious diseases of humans. This unit will provide you with a comprehensive knowledge and understanding of infectious diseases, the laboratory identification of causative pathogens as well as their pathogenicity and epidemiology. The unit will also include provision of the skills necessary to undertake common practical laboratory processes in clinical bacteriology.

Details

Career Level: Undergraduate Unit Level: Level 2 Credit Points: 6 Student Contribution Band: 8 Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Prerequisites: MBIO19012 Microbiology BIOL12106 Molecular Biology

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 <u>Assessment Policy and</u> <u>Procedure (Higher Education Coursework)</u>.

Offerings For Term 2 - 2018

- 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 <u>Residential School Timetable</u>.

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

<u>Metropolitan Campuses</u> Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

 Written Assessment Weighting: 15%
 Practical Assessment Weighting: 35%
 Examination 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 <u>University's Grades and Results Policy</u> for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the <u>CQUniversity Policy site</u>.

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 <u>CQUniversity Policy site</u>.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Student feedback

Feedback

Weekly quizzes to support learning

Recommendation

Quizzes and Multiple choice questions will accompany weekly modules

Feedback from Student feedback

Feedback

Assessment feedback

Recommendation

Reevaluate content marking criteria and scope of essay based assessment item and timing of submission date in relation to residential school

Unit Learning Outcomes

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

- 1. Describe the principal bacterial pathogens, commensal flora and opportunistic pathogens of each of the human body systems
- 2. Appraise the use of molecular techniques for identifying bacterial pathogens in human disease
- 3. Use practical skills to isolate, identify and test the basic antimicrobial resistance of pathogenic bacteria
- 4. Describe the mechanisms of antimicrobial resistance in bacteria
- 5. Understand and apply appropriate quality control processes for practice in clinical microbiology

Alignment of Learning Outcomes, Assessment and Graduate Attributes

—	N/A Level	•	Introductory Level	•	Intermediate Level	•	Graduate Level	0	Professional Level	0	Advanced Level	
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Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Practical Assessment - 35%	•		•	•	•
2 - Written Assessment - 15%	•	•			
3 - Examination - 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						
8 - Ethical practice	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 - Practical Assessment - 35%	•	•	•	•				•		
2 - Written Assessment - 15%			•	•						
3 - Examination - 50%		•	•	•				•		

Textbooks and Resources

Textbooks

BMSC12011

Prescribed

Bailey & Scott's Diagnostic Microbiology

Edition: 14th edn (2016) Authors: Patricia Tille Elsevier Mosby St Louis , Missouri , United States of America ISBN: 9780323354820 Binding: Hardcover

Additional Textbook Information

The specified text book is the same for BMSC12011 Clinical Microbiology and BMSC13003.Advanced Clinical Microbiology

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: <u>Harvard (author-date)</u> For further information, see the Assessment Tasks.

Teaching Contacts

Padraig Strappe Unit Coordinator <u>p.strappe@cqu.edu.au</u>

Schedule

Week 1 - 09 Jul 2018				
Module/Topic	Chapter	Events and Submissions/Topic		
Staphylococci/ Streptococci	Bailey and Scott's Diagnostic Microbiology Chapters 13 and 14 (14th Ed)	Rockhampton Lecture and Zoom Tutorial Welcome to the unit and an overview of the subject content , learning materials and assessments		
Week 2 - 16 Jul 2018				
Module/Topic	Chapter	Events and Submissions/Topic		
Aerobic Gram positive bacilli/ Filamentous Gram positive bacilli	Bailey and Scott's Diagnostic Microbiology Chapters 15,16, 17 and 18 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 1 content		
Week 3 - 23 Jul 2018				
Module/Topic	Chapter	Events and Submissions/Topic		

Enterobacteriaceae / Pathogenic Enterobacteriaceae	Bailey and Scott's Diagnostic Microbiology Chapter 19 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 3 content			
Week 4 - 30 Jul 2018					
Module/Topic	Chapter	Events and Submissions/Topic			
Oxidase positive Gram negative bacilli/ Facultative Gram negative bacilli	Bailey and Scott's Diagnostic Microbiology Chapters 20 21, 22, 25, 29, 31, 32, 33, 34, 35, 36, 37 and 38 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 3 content			
Week 5 - 06 Aug 2018					
Module/Topic	Chapter	Events and Submissions/Topic			
Gram negative cocci - <i>Moraxella</i> <i>catarrhalis</i> and Neisseriaceae/ Anaerobes	Bailey and Scott's Diagnostic Microbiology Chapters 39, 40 and 41 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 4 content			
Vacation Week - 13 Aug 2018					
Module/Topic	Chapter	Events and Submissions/Topic			
Individual study time					
Week 6 - 20 Aug 2018					
Module/Topic	Chapter	Events and Submissions/Topic			
		Rockhampton Lecture and Zoom			
Mycobacteria/ Spirochaetes, Mycoplasmas & Ureaplasma, Chlamydiae and Rickettsiae	Bailey and Scott's Diagnostic Microbiology Chapters 42, 43, 44, and 45 (14th Ed)	Rapid diagnostic assays in clinical microbiology Assessment Due: Week 6 Monday (20 Aug 2018) 11:45 pm AEST			
Week 7 - 27 Aug 2018					
Module/Topic	Chapter	Events and Submissions/Topic			
Urinary tract infections	Bailey and Scott's Diagnostic Microbiology Chapter 72 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 6 content			
Week 8 - 03 Sep 2018					
Module/Topic	Chapter	Events and Submissions/Topic			
Eye, ear, nose and throat & respiratory tract infections	Bailey and Scott's Diagnostic	Rockhampton Lecture and Zoom			
	Chapters 68, 69 and 71 (14th Ed)	Tutorial on week 7 content			
Week 9 - 10 Sep 2018	Chapters 68, 69 and 71 (14th Ed)	Tutorial on week 7 content			
Week 9 - 10 Sep 2018 Module/Topic	Chapters 68, 69 and 71 (14th Ed)	Tutorial on week 7 content Events and Submissions/Topic			
Week 9 - 10 Sep 2018 Module/Topic Skin, soft tissue and wound infections Compulsory Residential	Chapters 68, 69 and 71 (14th Ed) Chapter Bailey and Scott's Diagnostic	Tutorial on week 7 content Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 8 content			
Week 9 - 10 Sep 2018 Module/Topic Skin, soft tissue and wound infections Compulsory Residential School Wednesday 12th - Friday 14th September 2018	Chapters 68, 69 and 71 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapter 75 (14th Ed)	Tutorial on week 7 content Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 8 content Laboratory Practical Assessment Due: Week 9 Friday (14 Sept 2018) 11:45 pm AEST			
Week 9 - 10 Sep 2018 Module/Topic Skin, soft tissue and wound infections Compulsory Residential School Wednesday 12th - Friday 14th September 2018 Week 10 - 17 Sep 2018	Chapters 68, 69 and 71 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapter 75 (14th Ed)	Tutorial on week 7 content Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 8 content Laboratory Practical Assessment Due: Week 9 Friday (14 Sept 2018) 11:45 pm AEST			
Week 9 - 10 Sep 2018 Module/Topic Skin, soft tissue and wound infections Compulsory Residential School Wednesday 12th - Friday 14th September 2018 Week 10 - 17 Sep 2018 Module/Topic	Chapters 68, 69 and 71 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapter 75 (14th Ed) Chapter	Tutorial on week 7 content Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 8 content Laboratory Practical Assessment Due: Week 9 Friday (14 Sept 2018) 11:45 pm AEST Events and Submissions/Topic			
Week 9 - 10 Sep 2018 Module/Topic Skin, soft tissue and wound infections Compulsory Residential School Wednesday 12th - Friday 14th September 2018 Week 10 - 17 Sep 2018 Module/Topic Genital tract infections and Gastrointestinal tract infections	Chapters 68, 69 and 71 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapter 75 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapters 73 and 74 (14th Ed)	Tutorial on week 7 content Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 8 content Laboratory Practical Assessment Due: Week 9 Friday (14 Sept 2018) 11:45 pm AEST Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 9 content			
Week 10 - 17 Sep 2018 Module/Topic Skin, soft tissue and wound infections Compulsory Residential School Wednesday 12th - Friday 14th September 2018 Week 10 - 17 Sep 2018 Module/Topic Genital tract infections and Gastrointestinal tract infections	Chapters 68, 69 and 71 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapter 75 (14th Ed) Chapter Bailey and Scott's Diagnostic Microbiology Chapters 73 and 74 (14th Ed)	Tutorial on week 7 content Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 8 content Laboratory Practical Assessment Due: Week 9 Friday (14 Sept 2018) 11:45 pm AEST Events and Submissions/Topic Rockhampton Lecture and Zoom Tutorial on week 9 content			

Infections of sterile sites / Automation and molecular testing	Bailey and Scott's Diagnostic Microbiology Chapters 76, 72, 77 and 8 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 10 content
Week 12 - 01 Oct 2018		
Module/Topic	Chapter	Events and Submissions/Topic
Testing for antimicrobial susceptibility	Bailey and Scott's Diagnostic Microbiology Chapter 11 (14th Ed)	Rockhampton Lecture and Zoom Tutorial on week 11 content
Review/Exam Week - 08 Oct 2018		
Module/Topic	Chapter	Events and Submissions/Topic
Revision	Bailey and Scott's Diagnostic Microbiology All Chapters	Zoom tutorial on week 12 content and revision
Exam Week - 15 Oct 2018		
Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

The unit co-ordinator for BMSC12011, Clinical Microbiology is Dr Padraig Strappe, who can be contacted directly by email p.strappe@cqu.edu.au or phone, 07 49306499. For subject content related questions please submit your question via the Q and A forum on the moodle site and you will receive a response within 24hrs.

This subject will explore in depth commensal and pathogenic bacteria and the laboratory diagnostic tests commonly used for their detection together with treatment strategies. The broader relevance of clinical microbiology will be further exemplified through specific case studies and clinical examples provided throughout the lectures.

Live lectures will be provided from the Rockhampton campus which also be recorded together with weekly on line zoom tutorials.

During these tutorials, we will work through the weekly study questions and you will get the most benefit from the tutorials if you watch the weekly lectures and attempt the weekly study questions. You are strongly encouraged to participate in tutorials.

As per Australian educational standards, you are expected to commit 150 hours of engagement to your study of this unit. This is broken down as:

2 - 3 hours per week watching recorded lectures and revising the content through study notes

3 - 4 hours per week completing the weekly study questions and weekly revision quizzes on the unit's Moodle site.

1 - 2 hours per week attending the weekly tutorial and reflecting on your answers to the weekly study questions3 - 4 hours per week preparing your assessments or studying for your exams

This subject contains a compulsory Residential School on the Rockhampton Campus, 12th to the 14th September

Assessment Tasks

1 Rapid diagnostic assays in clinical microbiology Assessment

Assessment Type

Written Assessment

Task Description

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 1500 to 2000 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.

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. A comprehensive explanation of the defining features of each of the bacteria will be available through the learning materials provided during Week 2.

2: Research the literature relevant to your chosen bacterium. Scientific journal articles should form the basis for this literature search.

3: Prepare a 1500-2000 literature review summarizing the application of both PCR and MALDI-TOF in detection of the bacterium protein, with appropriate citation to your sources of literature

Assessment Due Date

Week 6 Monday (20 Aug 2018) 11:45 pm AEST

Return Date to Students

Week 8 Monday (3 Sept 2018) Comments, mark and annotated essay returned via Moodle site/CQU email.

Weighting

15%

Minimum mark or grade

A minimum pass grade of 50% which is equivalent to 50 marks out of 100

Assessment Criteria

The literature review will be evaluated in accordance with the detailed marking rubric available on the unit Moodle site. A brief overview of the assessment criteria are as follows;

A total of 100 marks will be available for the assessment

 40 marks for the scientific content which demonstrates a clear understanding of pathogenicity of the bacterium, the underlying technology behind PCR and MALDI-TOF, and the application of these techniques to clinical diagnosis.
 40 marks for a comprehensive discussion of the sensitivities of the two assays , comparing the advantages and

disadvantages of each assay

3: 10 marks for overall layout and organisation of the literature review

4: 10 marks for the appropriate use of references and formatting of the reference list. Weighting 15%

Referencing Style

• Harvard (author-date)

Submission

Online

Submission Instructions

Via the moodle site as a mircoscoft word document.

Learning Outcomes Assessed

- Describe the principal bacterial pathogens, commensal flora and opportunistic pathogens of each of the human body systems
- Appraise the use of molecular techniques for identifying bacterial pathogens in human disease

Graduate Attributes

- Critical Thinking
- Information Literacy

2 Laboratory Practical Assessment

Assessment Type

Practical Assessment

Task Description

The residential school is an opportunity to learn and perform a comprehensive range of bacteriological techniques and compliment the theoretical knowledge of diagnostic microbiology.

Students will undertake analysis of cases in clinical microbiology over three days, designed to mimic true diagnostic microbiology laboratory cases and they will subsequently be required to document their observations and findings in a laboratory manual which will be provided on the Unit Moodle Site. A detailed marking rubric for the laboratory practical assessment will be available on the unit moodle site

Assessment Due Date

Week 9 Friday (14 Sept 2018) 11:45 pm AEST End of residential school

Return Date to Students

Week 11 Monday (24 Sept 2018) Marks will be available 2 weeks after residential school. All marked workbooks returned 2 weeks after the second residential school

Weighting

35%

Minimum mark or grade

A passing grade of 50% is required

Assessment Criteria

Students will be assessed on the accuracy and interpretation of their laboratory investigations of the bacterial identification, staining and antimicrobial resistance of the cases provided. This assessment will be performed by use of a workbook for recording laboratory investigations and mock laboratory report for each case. Weighting

35%

Referencing Style

• Harvard (author-date)

Submission

Offline

Submission Instructions

Submit at the end of the residential school

Learning Outcomes Assessed

- Describe the principal bacterial pathogens, commensal flora and opportunistic pathogens of each of the human body systems
- Use practical skills to isolate, identify and test the basic antimicrobial resistance of pathogenic bacteria
- Describe the mechanisms of antimicrobial resistance in bacteria
- Understand and apply appropriate quality control processes for practice in clinical microbiology

Graduate Attributes

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

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

50%

Length 120 minutes

Minimum mark or grade A minimum passing grade of 50% Materials

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

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 <u>Academic Learning Centre (ALC)</u> 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