BMSC12010 *Clinical Biochemistry*
Term 3 - 2020

Profile information current as at 01/07/2022 02:22 pm

General Information

Overview
This unit provides students with an understanding of the role of the clinical biochemistry laboratory in the diagnosis and management of human diseases and disorders. The unit focuses on quality control in the pathology laboratory setting, the biochemical rationale for the diagnosis, prognosis, and monitoring of blood electrolyte balance, blood gases, blood acid-base balance, hormones, diabetes mellitus, jaundice, cardiac and liver disease, gout, inherited metabolic disorders, renal dysfunction and malignant diseases. Students will be instructed on correct procedures for preparing blood and urine samples for analysis, and for interpreting results in a clinical biochemistry laboratory.

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
Pre-requisites BMSC11004 Introductory Biochemistry OR BMSC11005 Foundations of Biochemistry
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 3 - 2020

- Cairns
- Mixed Mode
- Rockhampton
- Townsville

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 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: 15%
2. **Practical and Written Assessment**
Weighting: 25%
3. **Online Test**
Weighting: 60%

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.

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 Unit evaluation/student emails/self reflection

Feedback

Extra time and understanding provided due to COVID19 disruptions

Recommendation

Continue to monitor the impacts of COVID on student progress.

Feedback from Unit evaluation/student emails/self reflection

Feedback

Transition to end of term online test from formal examination

Recommendation

Monitor the impact of transition of formal examination to online test in student success and grade distribution.

Unit Learning Outcomes

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

1. Describe basic cell signalling, communication and metabolism (breakdown of proteins, fats and carbohydrates under aerobic conditions)
2. Recall, classify and evaluate significant pathological conditions which occur in the human body and their respective biochemical tests and assays
3. Recall and describe the major functions of a clinical pathology laboratory
4. Demonstrate competency in biochemical laboratory methods, test and techniques
5. Appraise the scientific literature and communicate this knowledge and understanding via scientific writing tasks such as practical reports and case study PBL assessment items.

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 - Written Assessment - 15%	•	•	•		•
2 - Practical and Written Assessment - 25%	•	•	•	•	•
3 - Online Test - 60%	•	•	•		

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				•	•
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 - 15%	•	•	•	•				•		
2 - Practical and Written Assessment - 25%	•	•	•	•	•	•	•	•		
3 - Online Test - 60%	•	•	•							

Textbooks and Resources

Textbooks

BMSC12010

Prescribed

CLINICAL CHEMISTRY
8th edition (2017)
Authors: Bishop, Fody and Schoeff
Jones & Bartlett Learning (now Cengage Learning)
Philadelphia , PA , USA
ISBN: 9781496335586
Binding: Hardcover
BMSC12010

Prescribed

MEDICAL BIOCHEMISTRY
5th edition (2018)
Authors: Baynes and Dominiczak
Saunders Elsevier
Philadelphia , PA , USA
ISBN: 978-0-7020-7299-4
Binding: Paperback

Additional Textbook Information
Medical Science CG93 Pathology major and CL10 students may want to consider the Clinical Chemistry Bishop textbook, all other courses should consider the Medical Biochemistry Baynes option.

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 styles below:

- Vancouver
- Harvard (author-date)

For further information, see the Assessment Tasks.

Teaching Contacts

Andrew Fenning Unit Coordinator
a.fenning@cqu.edu.au
Wayne Pederick Unit Coordinator
w.pederick@cqu.edu.au

Schedule

Week 1 - 09 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic

Cell Biochemistry - signalling (receptor and cell-cell communication)	PowerPoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 40-41; 5th Ed Ch 25-26	Lecture content pre-recorded.

Week 2 - 16 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Haemostasis and protein metabolism/disorders	PowerPoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 7 & 19; 5th Ed Ch 15 & 40-41	Lecture content pre-recorded.

Week 3 - 23 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Protein metabolism, disorders and purine metabolism	PowerPoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 19 & 31; 5th Ed Ch 15 & 16 Bishop 7th Ed Ch 12	Lecture content pre-recorded.

Week 4 - 30 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Carbohydrates during health and disease, diabetes and Lipids 1	PowerPoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 17, 18 & 21; 5th Ed Ch 31, 32 & 33 Bishop 7th Ed Ch 14 & 15	Lecture content pre-recorded.

Vacation Week - 07 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic
Mid-term vacation		

Week 5 - 14 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic
Lipids 2 and diagnostic enzymology	Powerpoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 10 & 20; 5th Ed Ch 30 & 37 Bishop 7th Ed Ch 26 & 28	Lecture content pre-recorded.

Week 6 - 21 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic
Liver function, blood gas and pH	PowerPoint lecture notes with references Baynes 4th Ed Ch 25 & 30; 5th Ed Ch 34 & 36 Bishop 7th Ed Ch 17 & 25	Lecture content pre-recorded. **Written Assessment - Clinical Case Study** Due: Week 6 Wednesday (23 Dec 2020) 11:55 pm AEST

Vacation Week - 28 Dec 2020

Module/Topic	Chapter	Events and Submissions/Topic
Mid-term vacation		

Week 7 - 04 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic
Renal function and failure, electrolytes	PowerPoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 23-24; 5th Ed Ch 35	Lecture content pre-recorded.

Week 8 - 11 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic
Hormones and tumour markers	Powerpoint lecture notes with references (provided in the unit Moodle site) Baynes 4th Ed Ch 39; 5th Ed Ch 27-28 Bishop 7th Ed Ch 20-24	Lecture content pre-recorded.

Week 9 - 18 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic
No lectures - revision		

Week 10 - 25 Jan 2021

Module/Topic	Chapter	Events and Submissions/Topic
No lectures - revision		

Week 11 - 01 Feb 2021

Module/Topic	Chapter	Events and Submissions/Topic
No lectures - revision		

Week 12 - 08 Feb 2021

Module/Topic	Chapter	Events and Submissions/Topic
No lectures - revision		**Practical and Written Assessment** Due: Week 12 Friday (12 Feb 2021) 11:55 pm AEST

Exam Week - 15 Feb 2021

Module/Topic	Chapter	Events and Submissions/Topic
No lecture - revision		

Term Specific Information

Your teaching team for T3 2020
Your unit coordinator is Dr Andrew Fenning together with a team of laboratory and postgraduate support staff will be managing the different components of the unit. You can contact the teaching team using the forum on the unit's Moodle site, via phone (07 4923 2568) or email (a.fenning@cqu.edu.au).

The unit
BMSC12010 Clinical Biochemistry fits into your course as a direct follow-on to BMSC11005 (Foundations of Biochemistry) and provides important scaffolding to third level (advanced) units such as BMSC13002 Advanced Clinical Biochemistry, BMSC13009 Immunology and BMSC13010 Pharmacology. The unit also synthesises important elements covered in your other 1st and 2nd level units such as Measurement and Evaluation, Anatomy and Physiology, Pathophysiology and Cardiorespiratory - so don't forget what you have already studied! BMSC12010 is a core unit in several courses, including:

Bachelor of Medical Science (CG93)
Bachelor of Medical Laboratory Science (CL10)
Bachelor of Paramedic Sciences (CG95)
Bachelor of Science (CU18)

Expectations - boldly go.....(where others have gone before!)
Despite the rumoured tough nature of this unit that does the rounds (yes - the unit contains new content and the expectation of integrating elements and it has the eye rolling "biochemistry" in the title) the class always raises the bar! This is illustrated by the excellent success rates (89% of students passed) and the percentage of students who achieved a HD (21%), D (24%) or C (27%) grades during Term 2 2018 and similarly during Term 2 2019 (91% of students passed (HD = 20%; D = 23%; C = 32.%; P= 14%)). In an analysis (tracking your interaction with Moodle) of why a student achieved a HD, D or C grade compared to a P or F grade the answer appears to be linked to your meaningful engagement. HD students interact with the material almost twice as much as a P student. That is a significant difference in the level of engagement and potential for learning!

Delivery and study commitment
This unit has all of the lecture content presented over the first 8 weeks of the unit schedule/unit Moodle site but these are arranged as themed modules rather than weeks. These 8 modules of content delivery will have an associated recorded ECHO360 lecture (and PowerPoint file) and be available from Moodle live of the term delivered in a weekly fashion typically of 2.5-3 hours in length. The PowerPoint file and lecture content are the primary delivery medium for this unit and will be where the final online test questions are drawn from. The final 4 weeks of the unit schedule have no content delivery - this has been intentionally left free to allow for consolidation and self managed/directed study and completion of any remaining assessment items. As the final online test forms an integral component of your tasks during the term, you should use this time to prepare for this item. You still have the same amount of content/contact time as other units - it has just been designed and delivered in a topic format of 8 weeks x 3 hours rather than 12 weeks x 2 hours. The Term 3 2020 lecture content will be all available from Moodle going live.

As with other Units - the design is such that students are expected to spend on average 10-12.5 hours per week (150 hours total) on associated study activities for this Unit. As a rough "time budget estimate" the approximate guide for your study per assessment is as follows:

Assessment item 1 Case study - 20 hours
Assessment item 2 Practical report - 30 hours
Assessment item 3 Online test - 100 hours
150 hours total

If you consider the lecture content and other activities will total approximately 40 hours, your own study needs to account for the rest (110 hours). Assessment items 1 and 2 have elements which are "time on task" activities to also contribute to the weekly content and hence the generic content study for this Unit. Use these details as a guide because your study journey and requirements are unique (some students may require less or more hours than suggested to pass).

Practical/Residential School information - important information
If you are enrolled in the Medical Science (CG93), Medical Laboratory Science (CL10) or Science (CU18) courses it is a course level learning and skill requirement for compulsory attendance of the laboratory residential school. If you are enrolled in the Paramedic Science (CG95) course, it is not compulsory for your course learning outcomes to attend the residential school (you can still attend if you wish however consider your study load). Regardless of the course you are enrolled in you will still need to complete the assessment item. We will use actual collected data from the residential school classes to complete the practical written assessment item. For those students needing to complete the residential school it is scheduled 29th-30th January 2021. A reminder to be aware of any COVID19 travel restrictions/recommendations which may impact your attendance.

Brief assessment overview and tips
Assessment item 1 Case study - Dr House styled case study diagnosis covering directed study on important clinical biochemical markers, communication and written expression, synthesis and problem solving and scientific writing/literature appraisal
Assessment item 2 Practical report - a mini journal article based on the laboratory data collected during the residential schools covering scientific writing and communication, problem solving, data analysis, basic statistical analysis and critical appraisal of the results and literature
Assessment item 3 Online test - content knowledge and problem solving

Make sure you cite correctly and gather sufficient reference materials for the written assessment items and proof your documents well - these were common features which translated to a less than optimal grade.

Assessment Tasks

1 Written Assessment - Clinical Case Study

Assessment Type
Written Assessment

Task Description
In your future profession, you will likely be working in an environment that focuses on the testing, diagnosis and treatment of human disease. The clinical biochemistry laboratory ensures an accurate diagnosis is developed to help inform the appropriate clinical management of the patient. This task is a little bit of basic clinical biochemistry and a

pinch of clinical diagnosis/medical detective work in a case study format. For those of you familiar with the TV series "House M.D." this is your opportunity to be a "Dr House". The task will hopefully provide some "time on task" focussed learning on several important sections of clinical biochemistry.

Our Patient
Poodles Hannerford is a 30 year old male who has presented to his GP, Dr Magoo, complaining of feeling tired and listless. He has indicated that along with the feelings of fatigue, he is also experiencing shortness of breath. Poodles's physical examination indicates a slightly enlarged liver. Poodles also indicates that he has started feeling a sharp pain (with some swelling and redness) at the back of his left leg near the calf area and is having trouble walking. Dr Magoo clearly needs your help with this patient. He started by using Google and Wikipedia (not good) and progressed to ordering some tests and clinical measurements (better). In the initial round of testing he has missed some important clinically relevant indicators! You should explore several possibilities.

Poodles may have more than one cause for his symptoms with several possibilities. Your task has two parts:

- Discuss each biometric/biochemical marker provided under the "clinical measurements" heading below and indicate if a value is outside the typical reference range and what an elevated or decreased reading for each of these markers could indicate (2000 words)
- Diagnose Poodles's symptoms (combining the "clinical measurements" and patient description) and provide a recommendation on what further tests you would require to confirm your diagnosis if any. You will need to explain your reasoning and your answer will require at least five primary references (original journal articles) (1500 words)

Total 3500 words

Clinical measurements

- ALT - 40 U/L (10-40)
- ALP - 110 U/L (40-125)
- Haemoglobin - 122 g/L (135-180)
- Haematocrit - 0.35 (0.38-0.52)
- Plasma thrombin time - 10 sec (10-15)
- Platelets - $550*10^{9}$/L (150-450)
- MCV - 73 fL (84-99)
- MCHC - 20 g/dL (30-36)
- Fibrin D-dimer - positive 0.8 mg/L (>0.5)
- Activated protein C (APC) resistance test sensitivity ratio - 1.1 (2.0-3.4)

Where to start/structure?
A suggested layout is as follows -
Part 1 (2000 words)

- brief introduction paragraph to the assignment and scenario
- dedicate a paragraph to each of the "clinical measurements" and use textbook referenced content to examine the diagnostic importance of the measurements and what an elevated or decreased reading for each of these markers could indicate

Part 2 (1500 words)

- written assignment/review format in paragraphs
- combine the "clinical measurements" and patient symptoms/description to form a rational and supported diagnosis using primary reference material (5 journal articles)
- clearly state and articulate your diagnosis
- conclude this section and the assignment with suggestions for Dr Magoo on further testing to correctly confirm Poodles's diagnosis and typical treatments for this condition

Assessment Due Date
Week 6 Wednesday (23 Dec 2020) 11:55 pm AEST

Return Date to Students
Week 9 Wednesday (20 Jan 2021)

Weighting
15%

Minimum mark or grade
50%

Assessment Criteria
The case study questions will be out of a total of 50 marks (3500 word limit). You should consider the following points when developing your assessment task:

- clarity of expression (spelling and grammar)
- the inclusion of key facts, accurate up-to-date research (i.e. in the last ten years)
- correct referencing
- use of clear and appropriate diagrams

The use of information contained solely within the study or lecture notes will result in the awarding of a passing grade at best. In order to obtain higher marks, information from other sources will be required. Students who use relevant information from other sources in their assignments will be looked upon favourably. The failure to cite references in your assignment will result in your not achieving full value for your efforts. Those students, who plagiarise material from textbooks, internet sites or other student's work will be subject to the standard plagiarism procedures in operation at CQUniversity (remember that such plagiarism will easily be detected using Turnitin). Please refer to the CQUniversity Library website for correct referencing information. Further details will be available in the Assessment block for this item in the unit Moodle site. Total = 50 marks (3500 words) (to achieve full marks, aim for the following) -

Part 1 (25 marks) (2000 words)

- correct clinical description of the "Clinical measurements" provided, indicating what a decreased or increased level of each would indicate (one paragraph for each); correctly referenced from either textbook or primary reference material (journal articles); correctly written paragraphs. (20 marks)
- correctly written and proofed. (5 marks)

Part 2 (25 marks) (1500 words)

- demonstrated scientific review format with a supported clinical diagnosis (primary reference articles). (15 marks)
- referencing (contextual use of 5 primary journal articles). (5 marks)
- written expression and proofing. (5 marks)

Referencing Style

- Vancouver
- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe basic cell signalling, communication and metabolism (breakdown of proteins, fats and carbohydrates under aerobic conditions)
- Recall, classify and evaluate significant pathological conditions which occur in the human body and their respective biochemical tests and assays
- Recall and describe the major functions of a clinical pathology laboratory
- Appraise the scientific literature and communicate this knowledge and understanding via scientific writing tasks such as practical reports and case study PBL assessment items.

Graduate Attributes

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

2 Practical and Written Assessment

Assessment Type
Practical and Written Assessment

Task Description
Analysis and interpretation of your experimental or treatment findings (both bench and clinical sciences) are essential features of communication in the medical sciences. The laboratory activities will use "real" collected samples and cover common elements of the clinical biochemistry testing laboratory such as glucose/diabetes testing, cardiovascular

markers, liver function tests and drug screening. ***You will be required to write a report from your choice of selected laboratory experiments (provided to you) in basic scientific journal format (from data collected during the residential schools).*** Scientific journal format typically contains the following elements:

- abstract
- introduction
- methods
- results
- discussion/conclusions
- limitations/future directions

This task requires you to complete a similar yet abbreviated format that only requires IMRAD (introduction, methods, results and discussion/limitations). This item assess unit learning outcomes 1-5.

Assessment Due Date
Week 12 Friday (12 Feb 2021) 11:55 pm AEST

Return Date to Students
Exam Week Friday (19 Feb 2021)

Weighting
25%

Minimum mark or grade
50%

Assessment Criteria
The practical report will be evaluated in accordance with the detailed marking rubric available in the Assessment item block located in the unit's Moodle site. A brief overview of the assessment criteria are as follows:
Introduction (20 marks): The introduction should be between 500–700 words in length and will provide the reader with sufficient information to understand why this study was performed and also provide any essential background information (with references to journal articles or text books) that is needed for interpretation of the results and discussion. It should conclude with a specific aim of the study. As a general guide—approximately 3–6 paragraphs with important and interesting background information that has been correctly referenced.
Methods (10 marks): There is no need to completely rewrite the methods section in detail. This section should be a brief summary approximately 1-2 paragraphs in length (100-200 words).
Results (20 marks): This section should contain the experimental results in summary form (means/SD), presented in either tables or graphs, not both. It is not enough just to use tables and graphs—you must also state the results referring to the table or figure. All tables and figures must be labelled appropriately. There should be no interpretation of results in this section—just state the results observed! Leave any interpretation to the discussion (100-200 words).
Discussion (20 marks): This section should be between 500-700 words in length and will provide an analysis and interpretation of the results of the study. The implication of your results should be discussed, referring back to statements made in your introduction. Alternative explanations should be offered if necessary especially for negative or unexpected results. Errors could also be discussed.
References (5 marks): All articles or texts referred to in the report need to be listed in this section. Referencing style should follow either the “Vancouver" or "Harvard” style as listed in the unit profile.
Writing Style/Presentation (25 marks): Reports should be clearly written in full sentences (not point form) using correct spelling and grammar. Abbreviations should be explained when first used. Any diagram (added from reference material) must be of good quality and sources must be acknowledged appropriately. The use of scientific writing style is important—peruse scientific journal entries. Of particular importance is clarity of written expression (clearly stated ideas and outcomes). The document should be in scientific journal format with well designed figures, graphs and tables where appropriate.

Clarity of expression (spelling and grammar), the inclusion of key facts, accurate research, correct referencing, and clear diagrams will be important general criteria for performing well in this assessment item (see below for more detailed criteria and in the associated Assessment item block in the unit Moodle site). The use of information contained solely within the study notes/practical support information will result in the awarding of a passing grade at best. In order to obtain higher marks information from other sources will be required. Students who use relevant information from other sources in their reports will be successful. As a guide, between 8 to 10 journal articles should be used! The failure to cite references in your assignments will result in you not achieving full value for your efforts.

Referencing Style

- Vancouver
- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe basic cell signalling, communication and metabolism (breakdown of proteins, fats and carbohydrates under aerobic conditions)
- Recall, classify and evaluate significant pathological conditions which occur in the human body and their respective biochemical tests and assays
- Recall and describe the major functions of a clinical pathology laboratory
- Demonstrate competency in biochemical laboratory methods, test and techniques
- Appraise the scientific literature and communicate this knowledge and understanding via scientific writing tasks such as practical reports and case study PBL assessment items.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

3 End of term online test

Assessment Type
Online Test

Task Description
• One, two hour, online test will be held at the end of term and will be based on material from all components of the course
• The test will be comprised of short answer and extended answer questions (no MCQ's)
• Check out all of the revision material located in the relevant revision Moodle Block (past exams, revision quizzes)
• Students must obtain a mark of at least 50% on the final online test to pass overall
• A non-communicable calculator , including scientific, programmable and graphics calculators is allowed

End of term online test instructions
There is only one (1 attempt). The format of the revision elements and tests have been maintained as best as can be for equivalency or content and revision. Given the online nature and lack of invigilation, randomisation within each question and a reduced time limit are the compromises employed. Answers delineated in dot point or flow chart type responses are acceptable. I will be marking all of these response manually - hence the feedback will not appear. The final date for this online test (held during the end of term examination block) will be updated during Term 3.

There are two (2) parts to the online test: Part A and Part B.
Total for the online test is 120 marks

Part A. Short-answer questions (Total 60 marks)
• There are 12 short-answer questions in Part A worth a total of 60 marks.
• Questions are to be typed in the space provided - some answers will be quite short (dot points are acceptable)
• You should attempt all 12 questions.

Part B. Extended-answer questions (Total 60 marks)
• There are 8 extended-answer question/topics in Part B.
• All students must answer question/topic 1 (Cardiovascular disease and diagnostic enzymology) and then answer any two of the following seven question/topics. The compulsory question/topic 1 will be presented as an individual question worth 20 marks; the subsequent questions/topics 2-8 will be presented in one question shell - just choose two of those to answer in your response - it would be good for you to type/indicate which ones you've chosen to complete.
• Each extended-answer question is worth 20 marks (20 x 3 = 60 marks).
• Questions are to be typed in the space provided - some answers will be quite short (dot points are acceptable).

Assessment Due Date

The due date will be finalised during Term 3 - this item to be completed during the formal end of term examination block (15th-19th February 2021)

Return Date to Students

Returned once marking completed

Weighting
60%

Minimum mark or grade
50%

Assessment Criteria
Online version of a traditional written examination - question will be manually marked.

Referencing Style

- Vancouver
- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Describe basic cell signalling, communication and metabolism (breakdown of proteins, fats and carbohydrates under aerobic conditions)
- Recall, classify and evaluate significant pathological conditions which occur in the human body and their respective biochemical tests and assays
- Recall and describe the major functions of a clinical pathology laboratory

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking

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