BMSC11005 *Foundations of Biochemistry*
Term 2 - 2021

Profile information current as at 19/04/2024 01:50 pm

All details in this unit profile for BMSC11005 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
This unit will enable students to develop their knowledge and understanding of biomolecules and cell function, including the structure and biological role of amino acids, proteins, nucleic acids, carbohydrates and lipids. They will develop a basic understanding of how these biomolecules are synthesised, catabolised and interconverted through key biochemical pathways to meet the needs of the cell and organism, and will provide the necessary knowledge to begin to study disease and drug treatment at the cellular level. Students will also develop a theoretical understanding of methods used in biochemical analysis and develop literature searching skills in the recognition and use of primary sources of scientific information.

Details
Career Level: *Undergraduate*
Unit Level: *Level 1*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites
Prerequisites: CHEM11041 Chemistry for the Life Sciences or CHEM11042 Fundamentals of Chemistry or CHEM11043 Atoms, Molecules and Matter
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 - 2021

- Brisbane
- Bundaberg
- Cairns
- Mackay
- Melbourne
- Online
- Rockhampton
- Sydney
- 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).

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. **Online Test**
Weighting: 40%
2. **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 Have your say feedback

Feedback
The audio quality in some of the lectures is poor.

Recommendation
Re-record affected lectures.

Feedback from Have your say feedback

Feedback
Students appreciated the weekly learning outcomes and the structure of the unit.

Recommendation
Continue to provide weekly learning outcomes and ensure the continued delivery of a cohesive and scaffolded body of knowledge in biochemistry.

Feedback from Have your say feedback

Feedback
Students enjoyed the clinical contextualisation of topics.

Recommendation
Continue to ensure learning and teaching materials are contextualised with a clinical prospective for students.

Unit Learning Outcomes

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

1. Demonstrate knowledge of the structure, function and biological roles of the major types of macromolecules and their building blocks
2. Explain the various methods used to separate and characterise macromolecules
3. Describe the relationship between structure and function of the components of biological membranes
4. Outline the basic processes involved in metabolism of carbohydares, fats and proteins and their catabolism to synthesise ATP through cellular respiration.

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
1 - Online Test - 40%	•	•	•	•
2 - Online Test - 60%	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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 - Online Test - 40%	•	•		•						
2 - Online Test - 60%	•	•		•						

Textbooks and Resources

Textbooks

BMSC11005

Supplementary

Principles of Medical Biochemistry
Edition: 4th (2017)
Authors: Meisenberg Simmons
Elsevier
Philadelphia , PA , United States
ISBN: 978-0-323-29616-8
Binding: Paperback

Additional Textbook Information
You can access the e-Book via CQU Library for free.
If you choose to purchase the textbook, here are the options:

- Paper copies can be purchased at the CQUni Bookshop here: http://bookshop.cqu.edu.au (search on the Unit code)
- eBook can be purchased via Vital Source (https://www.vitalsource.com/products/principles-of-medical-biochemistry-gerhard-meisenberg-phd-and-v9780323296168) OR Inkling (https://www.inkling.com/store/book/meisenberg-principles-medical-biochemistry-4e)

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:

- American Psychological Association 7th Edition (APA 7th edition)
- Vancouver

For further information, see the Assessment Tasks.

Teaching Contacts

Corine Ting Unit Coordinator
c.ting@cqu.edu.au
Jordon Irwin Unit Coordinator
j.irwin@cqu.edu.au

Schedule

Week 1 - 12 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Body fluids and pH	Chapter 1 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 2 - 19 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Amino acids and proteins	Chapter 1, 2 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 3 - 26 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Enzymes	Chapter 4, 5 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 4 - 02 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Nucleic acids and protein synthesis	Chapter 6 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 5 - 09 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lipids and carbohydrates	Chapter 24, 25 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Vacation Week - 16 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 23 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Membrane transport	Chapter 12 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	**Assessment 1 Mid-Term Online Test opens at Week 6 Thursday at midday 12pm (AEST) and closes at Week 6 Friday at midday 12pm (AEST).** This will assess topics covered during Weeks 1 to 5. **Mid-term Online Test** Due: Week 6 Friday (27 Aug 2021) 12:00 pm AEST

Week 7 - 30 Aug 2021

Module/Topic	Chapter	Events and Submissions/Topic
Metabolism I	Chapter 21, 22 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 8 - 06 Sep 2021

Module/Topic	Chapter	Events and Submissions/Topic
Metabolism II	Chapter 20, 22, 25, 28 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 9 - 13 Sep 2021

Module/Topic	Chapter	Events and Submissions/Topic
Nucleic acid metabolism I	Chapter 30 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 10 - 20 Sep 2021

Module/Topic	Chapter	Events and Submissions/Topic

Nucleic acid metabolism II	Chapter 30 Principles of Medical Biochemistry (S. Meisenberg, 4th Edition)	

Week 11 - 27 Sep 2021

Module/Topic	Chapter	Events and Submissions/Topic
Biochemical basis of diseases		

Week 12 - 04 Oct 2021

Module/Topic	Chapter	Events and Submissions/Topic
Revision week		

Review/Exam Week - 11 Oct 2021

Module/Topic	Chapter	Events and Submissions/Topic

Exam Week - 18 Oct 2021

Module/Topic	Chapter	Events and Submissions/Topic

Term Specific Information

Your unit coordinator for BMSC11005 Foundations of Biochemistry is Corine Ting. You can contact me using the forum on the unit's Moodle site or alternatively through email (c.ting@cqu.edu.au) or on 0749309600. The forum for this unit is continuously monitored and you can expect a response within 24-48 hours of posting your question.

As the name suggests, this unit will provide you with foundation knowledge of biochemistry in relation to your profession. BMSC11005 Foundations of Biochemistry is a core unit in several courses, including:

- Bachelor of Paramedic Sciences
- Bachelor of Medical Sciences
- Bachelor of Medical Laboratory Science
- Bachelor of Sciences (Chiropractic)
- Bachelor of Science
- Bachelor of Environmental Science

The relevance of biochemistry in each specific discipline will be exemplified through the use of discipline-specific examples provided throughout the lectures and tutorials. Tutorials are delivered each week via ZOOM. During these tutorials, we will work through the weekly study questions that are provided to you on the Moodle site. These weekly study questions will help you apply knowledge learned during the weekly lecture and prepare you for the assessments.You will get the most benefit from the tutorials if you watch the weekly lectures beforehand and attempt the weekly study questions. You are strongly encouraged to participate in tutorials. Weekly revision quizzes are also provided to reinforce the knowledge you have gained from the lectures and to support your learning experience in this unit.

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 questions
- 3 - 4 hours per week preparing your assessments or studying for your online test

Assessment Tasks

1 Mid-term Online Test

Assessment Type
Online Test

Task Description
An understanding of the biochemical composition of a human body is essential in many health professions. This unit will enable you to further develop your knowledge and understanding of body fluids, biomolecules and cell function, including the structure and biological role of amino acids, proteins, nucleic acids, carbohydrates and lipids. This particular assessment requires you to demonstrate knowledge and understanding of the content in this unit.
You are required to complete the Mid-term Online Test through the Moodle site.

- This Online Test will assess the topics covered during Weeks 1 to 5.
- This Online Test will open on Week 6 Thursday at midday 12pm AEST and will close on Week 6 Friday at midday 12pm AEST.
- You will be allowed one attempt at this Online Test.
- The Online Test will be automatically submitted at the completion of the online test.
- In the absence of an approved extension, there will be no opportunity to complete this Online Test after the due date.

Your score from this Mid-term Online Test will contribute 40% to your final grade.

Assessment Due Date
Week 6 Friday (27 Aug 2021) 12:00 pm AEST
You are required to finish the Online Test within the specified time duration. You are not required to use the entire time duration. Online Test will be automatically submitted at the completion of the specified time duration.

Return Date to Students
Week 7 Monday (30 Aug 2021)
Marks will be available upon after moderation by the academic team.

Weighting
40%

Minimum mark or grade
This assessment has a minimum passing grade of 50%.

Assessment Criteria
Questions will be marked and moderated by the academic team. Your total mark for this assessment task and marks for individual questions will be released. If you have any specific questions please contact your unit coordinator directly.

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)
- Vancouver

Submission
Online

Submission Instructions
Online Test must be submitted within or at the completion of the specified time duration.

Learning Outcomes Assessed

- Demonstrate knowledge of the structure, function and biological roles of the major types of macromolecules and their building blocks
- Explain the various methods used to separate and characterise macromolecules
- Describe the relationship between structure and function of the components of biological membranes
- Outline the basic processes involved in metabolism of carbohydares, fats and proteins and their catabolism to synthesise ATP through cellular respiration.

Graduate Attributes

- Communication
- Problem Solving
- Information Literacy

2 End-of-term Online Test

Assessment Type
Online Test

Task Description
In your future profession, you may encounter many diseases and/or medical conditions that are caused by dysfunctional biochemical pathways. It is important that you understand the roles of biochemical metabolism in the human body,

including how biomolecules are synthesised, catabolised and interconverted through key biochemical reactions. The intent of this assessment is to provide you with an opportunity to assess your understanding of this knowledge.
You are required to complete the End-of-term Online Test through the Moodle site.

- This Online Test will assess the topics covered during Weeks 6 to 11.
- This Online Test will open during the exam week.
- You will be allowed one attempt at this Online Test.
- The Online Test will be automatically submitted at the completion of the specified time duration.
- In the absence of an approved extension, there will be no opportunity to complete this Online Test after the due date.

Your score from End-of-term Online Test will contribute 60% to your final grade.

Assessment Due Date

End-of-term Online Test will open during the exam week. You are required to finish the Online Test within the specified time duration. You are not required to use the entire time duration. Online Test will be automatically submitted at the completion of the specified time duration.

Return Date to Students

Marks will be available upon after moderation by the academic team, prior to the Certification of Grades.

Weighting
60%

Minimum mark or grade
This assessment has a minimum passing grade of 50%.

Assessment Criteria
Questions will be marked and moderated by the academic team. Your total mark for this assessment task and marks for individual questions will be released. If you have any specific questions please contact your unit coordinator directly.

Referencing Style

- American Psychological Association 7th Edition (APA 7th edition)
- Vancouver

Submission
Online

Submission Instructions
Online Test must be submitted within or at the completion of the specified time duration.

Learning Outcomes Assessed

- Demonstrate knowledge of the structure, function and biological roles of the major types of macromolecules and their building blocks
- Explain the various methods used to separate and characterise macromolecules
- Describe the relationship between structure and function of the components of biological membranes
- Outline the basic processes involved in metabolism of carbohydares, fats and proteins and their catabolism to synthesise ATP through cellular respiration.

Graduate Attributes

- Communication
- Problem Solving
- Information Literacy

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