BIOL11102 *Life Science Laboratory*

Term 1 - 2023

Profile information current as at 19/04/2024 05:22 pm

All details in this unit profile for BIOL11102 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

Understanding the evolution, anatomy and identification of plants and animals is critical in tackling the scientific study or management of organisms, ecosystems and animal or plant production. In Life Science Laboratory, you will study evolution and phylogeny, and the anatomy of the most common vertebrate and invertebrate animals, plants, algae and fungi, to support the development of your practical skills, which include specimen collection, preparation and curation; microscopic and macroscopic identification; and animal and plant dissection. This unit includes field work where you will use the knowledge and skills developed to study organisms in both terrestrial and marine ecosystems. On conclusion of this unit, you will understand the important role that biology plays in research and innovation in the fields of science, environmental science and agriculture.

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

Anti-requisite BIOL11099 Living Systems
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 1 - 2023

- Mixed Mode
- Rockhampton

Attendance Requirements

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

Residential Schools

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

Website

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

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit 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. **Practical Assessment**
Weighting: 30%
3. **Laboratory/Practical**
Weighting: Pass/Fail
4. **Online Quiz(zes)**
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.

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 STUE Student Comments

Feedback

Residential school was a really motivating component of this course, I really enjoyed putting theoretical learning to real world, first hand experiences.

Recommendation

The residential school to remain a core component of the unit and continue to connect theory with real world content and experiences.

Feedback from STUE Student Comments

Feedback

Learning videos are great, can they be made slightly shorter to make it more encouraging to sit through and watch.

Recommendation

Learning videos could be sequenced into shorter sections to increase student engagement and learner attention.

Feedback from STUE Student Comments

Feedback

The residential school should be condensed into 4 days.

Recommendation

Residential school duration is suitable given the amount of material that needs to be covered.

Unit Learning Outcomes

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

1. Distinguish between major taxa of plants and animals using morphological features
2. Discuss evolution and the Hierarchy of Classification in relation to the diversity of living organisms
3. Safely perform laboratory activities, including the use of microscopes and aseptic techniques, and the dissection of plants and animals
4. Collect and curate plant specimens
5. Use dichotomous keys to identify flowering plants and insects.

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 - 20%	•	•			
2 - Practical Assessment - 30%			•	•	•
3 - Laboratory/Practical - 0%			•	•	•

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
4 - Online Quiz(zes) - 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					
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 - Practical Assessment - 30%	•	•	•			•				
3 - Laboratory/Practical - 0%		•	•	•	•					
4 - Online Quiz(zes) - 50%	•	•	•	•						

Textbooks and Resources

Textbooks

There are no required textbooks.

Additional Textbook Information
Recommended reference textbook
Campbell Biology 12th edition (Australian and New Zealand Edition)
Lisa A. Urry, Philippa Howden-Chapman, Lisa Early, Steven Alexander Wasserman, Jenny Ombler, Michael Lee Cain, Neil A. Campbell, Jane B. Reece, Peter V. Minorsky, Noel Meyers
ISBN: 9781488626241
Published by Pearson (October 18th 2021) - Copyright © 2022
Publisher: Pearson Education Australia
Country of Publication: AU

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

Teaching Contacts

Guy Carton Unit Coordinator
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Schedule

Week 1 - 06 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Unifying Themes of Biology Mechanisms of Evolution Evolution of Populations Tutorial Q and A	Evolution, the themes of biology, and scientific inquiry (pg 2 - 26) Mechanisms of Evolution (pg 471 - 575) (Note: page references are for the 12th edition and may differ from early editions)	

Week 2 - 13 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
The Tree of Life and Phylogeny Cell Theory The Prokaryotes Tutorial Q and A	Phylogeny and the Tree of Life (pg 578 to 597) The Cell (pg 94 to 213) Bacteria and Archaea (pg 598 to 617)	

Week 3 - 20 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic

Protists Fungi Tutorial Q and A	Protists (pg 618 to 642) Fungi (pg 689 to 709)	

Week 4 - 27 Mar 2023

Module/Topic	Chapter	Events and Submissions/Topic
Plant Diversity, Form and Function I Tutorial Q and A	Plant diversity I: How plants colonised land (pg 643 to 662) Plant diversity II: The evolution of seed plants (pg 663 to 688)	

Week 5 - 03 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
Plant Diversity, Form and Function II Tutorial Q and A	Plant form and function (pg 798 to 920)	

Vacation Week - 10 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
		Media article on an animal recently discovered in Australia Due: Vacation Week Monday (10 Apr 2023) 9:00 am AEST

Week 6 - 17 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
Animal Diversity Animal Morphology The Invertebrates Tutorial Q and A	An overview of animal diversity (pg 710 to 724) An introduction to invertebrates (pg 725 to 729)	

Week 7 - 24 Apr 2023

Module/Topic	Chapter	Events and Submissions/Topic
Eumetazoans (Cnidarians) Lophotrochozoans (Platyhelminths, Annelids) Tutorial Q and A	An introduction to invertebrates (pg 730 to 743)	

Week 8 - 01 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Lophotrochozoans (Molluscs, Arthropods) Introduction to Insects Tutorial Q and A	Ecdysozoans are the most species-rich animal group (pg 744 to 751)	

Week 9 - 08 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Residential School		Residential School A - Monday to Friday Week 9

Week 10 - 15 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Residential School		Residential School B - Wednesday to Sunday Week 10

Week 11 - 22 May 2023

Module/Topic	Chapter	Events and Submissions/Topic
Deuterostomes (Echinoderms) The Origin and Evolution of Vertebrates Tutorial Q and A	Echinoderms and chordates are deuterostomes (pg 752 to 754) The origin and evolution of vertebrates (pg 757 to 797)	

Week 12 - 29 May 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
The Origin and Evolution of Vertebrates (cont) Animal Form and Function Unit Recap	Animal Form and Function (pg 921 to 946)	

Review/Exam Week - 05 Jun 2023		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
End of Unit Assessment		**End of Unit Online Test** Due: Review/Exam Week Monday (5 June 2023) 11:45 pm AEST

Assessment Tasks

1 Media article on an animal recently discovered in Australia

Assessment Type
Written Assessment

Task Description
This assessment requires you to research an **animal** that has been discovered in Australia (including surrounding territories and waters) within the last ten years and write a 500 word article for a popular science magazine.
Your article should include a description of the scientific classification (kingdom, phylum etc) and the characteristics associated with the animal in that group (approximately 200 words). In the remaining words (approximately 300), you should describe what is interesting about the animal, what makes it different from other similar animals, the significance of the discovery, or other relevant information that will attract and keep the audience's attention. At the end of the article, you must provide a list of the references you have used, but do not use any in-text referencing except to refer to the scientific paper that describes the species that has been discovered. As well as uploading your assignment as a ***Word document***, you must upload a ***Adobe pdf*** of the original paper where the species is described. Exemplar articles will be available on the unit's Moodle page at the commencement of the term.

Assessment Due Date
Vacation Week Monday (10 Apr 2023) 9:00 am AEST

Return Date to Students
Week 7 Monday (24 Apr 2023)

Weighting
20%

Assessment Criteria
Assessment Criteria
The complete assessment rubric will be available on the unit's Moodle site at the commencement of the term.
The assessment criteria primarily focuses on the following:
1. Accuracy of the information about the newly discovered species and its classification.
2. Relevance of the material.
3. Accuracy of referencing.
4. Correct English grammar.
5. Clarity of expression and ability to engage an audience.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Upload your article as a Word document (.doc or .docx) and the original article where the species is described as an Adobe pdf.

Learning Outcomes Assessed

- Distinguish between major taxa of plants and animals using morphological features
- Discuss evolution and the Hierarchy of Classification in relation to the diversity of living organisms

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy

2 Practical Assessment

Assessment Type
Practical Assessment

Task Description
You will demonstrate a range of biological laboratory skills and complete a series of assessments during the Residential School. Assessment activities will address competence in the use of microscopes and preparation of biological slides, scientific drawings for biological, plant and animal dissection, identification of plant and animal organs, tissues, and structures, use of dichotomous and lucid keys for plant and insect identification, and short online quizzes based on the material covered during the practical laboratory session.

Assessment Due Date

Residential School Week (Residential School A - Week 9, Residential School B - Week 10)

Return Date to Students

Residential School Week

Weighting
30%

Assessment Criteria
Competency and performance of assessment tasks will be evaluated on the correctness, comprehensiveness and relevance of the response. Specific details regarding each Residential School assessment will be available on the Moodle two weeks prior to the the residential school (see Week 9 and 10) and be explained prior to undertaking the relevant practical laboratory session.

Referencing Style

- Harvard (author-date)

Submission
Offline Online

Learning Outcomes Assessed

- Safely perform laboratory activities, including the use of microscopes and aseptic techniques, and the dissection of plants and animals
- Collect and curate plant specimens
- Use dichotomous keys to identify flowering plants and insects.

Graduate Attributes

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

3 Laboratory/Practical

Assessment Type
Laboratory/Practical

Task Description
During or after each laboratory session, students will present their work to a supervisor for marking and feedback. Students must ensure that all required skills checks are completed and signed off on.

Assessment Due Date

Residential School Week

Return Date to Students

Residential School Week

Weighting
Pass/Fail

Minimum mark or grade
Pass

Assessment Criteria
The assessment criteria for each laboratory session will vary, but assessment criteria will generally involve the following: Safety, Accuracy, Completeness, and Concept understanding. After receiving feedback, and at the supervisors discretion students maybe asked to demonstrate proficiency in skills. This assessment is a Pass/Fail.

Referencing Style

- Harvard (author-date)

Submission
Offline

Learning Outcomes Assessed

- Safely perform laboratory activities, including the use of microscopes and aseptic techniques, and the dissection of plants and animals
- Collect and curate plant specimens
- Use dichotomous keys to identify flowering plants and insects.

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work

4 End of Unit Online Test

Assessment Type
Online Quiz(zes)

Task Description
The unit test is based on lecture and study material covered during Weeks 1-12 (students are asked to revise the lecture and reading material associated with each week). The unit test is limited to 120 minutes for completion and must be submitted after completion. Answers will be automatically submitted after 120 minutes. Test questions will be a combination ten (10) short and eight (8) long answer questions. Short answer questions will form 20% and long answer questions 80% of total available marks

Number of Quizzes
1

Frequency of Quizzes
Other

Assessment Due Date
Review/Exam Week Monday (5 June 2023) 11:45 pm AEST

Return Date to Students

Weighting
50%

Assessment Criteria
Answers will be assessed on their completeness, relevance, depth and correct application of biological knowledge.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Distinguish between major taxa of plants and animals using morphological features
- Discuss evolution and the Hierarchy of Classification in relation to the diversity of living organisms

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- 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