



BIOL11102 *Life Science Laboratory*

Term 1 - 2024

Profile information current as at 30/04/2024 04:20 am

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 - 2024

- Mixed Mode

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 SUTE UNIT COMMENTS REPORT

Feedback

I found the amount of weekly content to be an excellent balance. It helped that I really enjoy the subject matter but the lectures were easy to absorb, especially with the ability to pause, slow down and speed up. The text was a good choice as well.

Recommendation

The amount of unit content and the prescribed text will remain unchanged.

Feedback from SUTE UNIT COMMENTS REPORT

Feedback

The time provided for the final quiz was too minimal given the requirements of the questions.

Recommendation

Unit assessment and weighting will be changed for 2024 in line with a wider unit refresh and update.

Feedback from SUTE UNIT COMMENTS REPORT

Feedback

Assignments were clear and engaging.

Recommendation

Assessments to continue to have clear instructions and engaging content.

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



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

BIOL11102

Supplementary

Campbell Biology, Australian and New Zealand Edition

Edition: 12th (2021)

Authors: Lisa A. Urry, Noel Meyers, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, Rebecca Orr, Karen Burke, Da Silva Ann, Parkinson Lesley, Lluca Prasad Chunduri

Pearson Education

Australia

ISBN: 9780655705840

Binding: Hardcover

Additional Textbook Information

Available as an eTextbook from <https://www.pearson.com/>.

Previous editions (9th edition onwards) of Campbell Biology, Australian and New Zealand Edition, are also acceptable.

Also available through the CQU Library in hardcopy and ebook formats .

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

a.carton@cqu.edu.au

Schedule

Week 1 - 04 Mar 2024

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 - 11 Mar 2024

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

Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Protists	Protists (pg 618 to 642)	
Fungi	Fungi (pg 689 to 709)	
Tutorial Q and A		

Week 4 - 25 Mar 2024

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

Week 5 - 01 Apr 2024

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

Vacation Week - 08 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
		Media article on an animal recently discovered in Australia Due: Vacation Week Monday (8 Apr 2024) 5:00 pm AEST

Week 6 - 15 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
Residential School		Residential School A - Practical Assessment Due: Tuesday to Friday Week 6

Week 7 - 22 Apr 2024

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

Week 8 - 29 Apr 2024

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

Week 9 - 06 May 2024

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

Week 10 - 13 May 2024

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)
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Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Residential School		Residential School B - Practical Assessment Due: Friday Week 11 to Monday Week 12

Week 12 - 27 May 2024

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 - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
End of Unit Assessment		End of Unit Online Test Due: Review/Exam Week Wednesday (5 June 2024) 7:00 am 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 (8 Apr 2024) 5:00 pm AEST

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

Return Date to Students

Week 9 Monday (6 May 2024)

Article and feedback returned via Moodle.

Weighting

20%

Minimum mark or grade

50%

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. Clarity of expression and ability to engage an audience.
4. Correct English grammar and punctuation.
5. Accuracy of referencing.

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 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, 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 6, Residential School B - Week 11-12)

Return Date to Students

Residential School Week

Weighting

30%

Minimum mark or grade

50%

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 residential school (see Week 6 and 11) 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 90 minutes for completion and must be submitted after completion. Answers will be automatically submitted after 90 minutes. Test questions will be a combination eight (8) short and four (4) long answer questions. Short answer questions will form 40% and long answer questions 60% of total available marks.

Number of Quizzes

1

Frequency of Quizzes

Other

Assessment Due Date

Review/Exam Week Wednesday (5 June 2024) 7:00 am AEST

The assessment will open at 7:00am Tuesday 4th June and close at 7:00am Wednesday 5th June. The assessment must be completed within this 24hr window.

Return Date to Students

Exam Week Friday (14 June 2024)

Returned via the unit Moodle site

Weighting

50%

Minimum mark or grade

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

Submission Instructions

The end of unit test is limited to 90 minutes and must be completed within this time. The test will automatically self-submit after 90 minutes unless it has been manually submitted prior.

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