



# **BIOL11102 *Life Science Laboratory***

## **Term 1 - 2020**

Profile information current as at 07/05/2024 08:58 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.

### **Corrections**

#### **Unit Profile Correction added on 28-04-20**

The Internal Practical Classes and Residential School for this unit have been postponed and you will need to complete some of the practical work at a later date. Further details about the postponed practical classes and residential school will be made available on Moodle in due course.

#### **Unit Profile Correction added on 28-04-20**

A component of assessment 3, the Pass/Fail activity associated with Practical One (Correctly set up a microscope, prepare a wet mount slide of a protist and draw the specimen on the microscope slide) will need to occur at a later date. Details will be made available on Moodle in due course.

#### **Unit Profile Correction added on 28-04-20**

The end of term examination has now been changed to an alternate form of assessment. Please see your Moodle site for details of the assessment.

## 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 - 2020

- Bundaberg
- 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. **Examination**

Weighting: 50%

### Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the [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 Moodle Student Evaluation

##### Feedback

Students found the practicals and field trip improved their understanding of the unit material

##### Recommendation

The practicals and field trip will be continue to be run.

#### Feedback from Moodle Student Evaluation

##### Feedback

Some students said they would prefer it if the content was taught from the simplest to most advanced organisms rather than starting with the most advanced

##### Recommendation

The order of the material will be reviewed.

#### Feedback from Moodle Student Evaluation

##### Feedback

The unit evaluation score for assessment feedback indicated that students would like improved feedback on their first assessment.

##### Recommendation

The feedback given to students on the written assessment will be reviewed to see if it can be made more informative

#### Feedback from Self reflection

##### Feedback

It was difficult to provide a graded assessment of the students' performance in laboratory based skills at the same time as teaching the skills and conducting the other laboratory activities.

##### Recommendation

Change the in-class assessment items to a pass/fail activity rather than a graded assessment and have the extra marks assigned to the online practical quizzes.

## 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%			•	•	•
4 - Examination - 50%	•	•			

## Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication		•			•
2 - Problem Solving	•			•	
3 - Critical Thinking		•	•		
4 - Information Literacy	•			•	•
5 - Team Work			•		
6 - Information Technology Competence			•	•	
7 - Cross Cultural Competence					
8 - Ethical practice			•		
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 - Examination - 50%	•	•	•							

## Textbooks and Resources

### Textbooks

BIOL11102

#### Prescribed

##### **Campbell Biology: Australian and New Zealand Version**

11th Edition (2018)

Authors: Urry, LA, Meyers, N, Cain, ML, Wasserman, SA, Minorsky, PV, Reece, JB

Pearson Australia

Melbourne, Victoria, Australia

ISBN: 9781488613715

Binding: Hardcover

#### **Additional Textbook Information**

The eBook is available at <https://www.pearson.com.au/9781488619878> as an alternative to the hard copy edition.

Paper copies can be purchased at the CQUni Bookshop here: <http://bookshop.cqu.edu.au> (search on the Unit code)

[View textbooks at the CQUniversity Bookshop](#)

### IT Resources

**You will need access to the following IT resources:**

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

## Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Guy Carton** Unit Coordinator

[a.carton@cqu.edu.au](mailto:a.carton@cqu.edu.au)

## Schedule

### **Week 1 - 09 Mar 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Understanding biological diversity	Study Guide Module 1	
Evolution by natural selection	Study Guide Module 2	
Hierarchy of classification	Study Guide Module 3	

### **Week 2 - 16 Mar 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Taxonomy	Study Guide Module 3	
Cell theory	Study Guide Module 4	
Prokaryotes	Study Guide Module 5	

### **Week 3 - 23 Mar 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Endosymbiosis	Study Guide Module 6	
Protists	Study Guide Module 7	
Algae	Study Guide Module 7	

**Week 4 - 30 Mar 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Bryophytes Monilophytes and Lycophytes Gymnosperms	Study Guide Module 8 Study Guide Module 9 Study Guide Module 10	

**Week 5 - 06 Apr 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Angiosperms (flowering plants) Review of plant morphology	Study Guide Module 11 Study Guide Module 12	<b>Media article on an organism recently discovered in Australia</b> Due: Week 5 Monday (6 Apr 2020) 11:45 pm AEST

**Vacation Week - 13 Apr 2020**

Module/Topic	Chapter	Events and Submissions/Topic
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**Week 6 - 20 Apr 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Fungi Porifera Cnidarians	Study Guide Module 13 Study Guide Module 14 Study Guide Module 15	

**Week 7 - 27 Apr 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Platyhelminths Annelids	Study Guide Module 16 Study Guide Module 17	Block practicals for Bundaberg Students 28th April - 1st May in Bundaberg

**Week 8 - 04 May 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Molluscs Nematodes	Study Guide Module 18 Study Guide Module 19	

**Week 9 - 11 May 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Arthropods Focus on insects	Study Guide Module 20 Study Guide Module 20	Residential school including field trip for Distance Students 11th - 15th May in Rockhampton

**Week 10 - 18 May 2020**

Module/Topic	Chapter	Events and Submissions/Topic
No lectures		Residential school including field trip for Distance Students 20th - 24th May in Rockhampton Field trip for Rockhampton and Bundaberg Students 21st May

**Week 11 - 25 May 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Echinoderms Chordates Humans and other vertebrates	Study Guide Module 21 Study Guide Module 22 Study Guide Module 22	

**Week 12 - 01 Jun 2020**

Module/Topic	Chapter	Events and Submissions/Topic
Review of animal morphology Origin of life Unit review	Study Guide Module 23 Study Guide Module 24	<b>Online tests on Practical work</b> Due: Week 12 Friday (5 June 2020) 11:45 pm AEST

**Review/Exam Week - 08 Jun 2020**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Exam Week - 15 Jun 2020</b>		
Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

Rockhampton students will attend internal practicals during the term and a field trip to North Keppel Island on 21st May.

Bundaberg students will attend a block practical session in Bundaberg from 28th April to 1st May and travel to Rockhampton to attend a field trip to North Keppel Island on 21st May

Mixed mode students will attend a five day residential school (including a field trip) in Rockhampton either from 11th to 15th May OR 18th to 22nd May

## Assessment Tasks

### 1 Media article on an organism recently discovered in Australia

#### Assessment Type

Written Assessment

#### Task Description

This assessment requires you to research an organism that has been discovered in Australia (including surrounding 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 organisms in that group (approximately 200 words). In the remaining words (approximately 300), you should describe what is interesting about the organism, what makes it different from other similar organisms, 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 pdf of the original paper where the species is described.

#### Assessment Due Date

Week 5 Monday (6 Apr 2020) 11:45 pm AEST

#### Return Date to Students

Week 7 Monday (27 Apr 2020)

#### Weighting

20%

#### Minimum mark or grade

40%

#### Assessment Criteria

The complete assessment rubric will be available on the Moodle site and the criteria will include:

- Accuracy of the information about the newly discovered species and its classification
- Relevance of the material
- Accuracy of referencing
- Correct English grammar, 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 a 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
- Critical Thinking

## 2 Online tests on Practical work

### Assessment Type

Practical Assessment

### Task Description

You will complete three (3) short tests (10% each) based on practical material covered during your practical sessions. The timing of these will vary according to your enrolment mode (On-campus or Mixed mode). You must complete the relevant practical work before attempting the tests. A full schedule of practical work and associated tests will be available on the Moodle site for each enrolment mode and all practical tests will close at the end of week 12. These on-line tests will be based on the material covered in:

1. Field trip (untimed; short answer),
2. Practicals 1 - 4 (30 minutes; multiple choice questions; one attempt only),
3. Practicals 5 - 8 (30 minutes; multiple choice questions; one attempt only).

### Assessment Due Date

Week 12 Friday (5 June 2020) 11:45 pm AEST

### Return Date to Students

Exam Week Monday (15 June 2020)

### Weighting

30%

### Minimum mark or grade

40%

### Assessment Criteria

Answers to on-line tests will be assessed on the correctness, comprehensiveness and relevance of your answers.

### Referencing Style

- [Harvard \(author-date\)](#)

### Submission

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

- Problem Solving
- Team Work

## 3 Laboratory skills tests

### Assessment Type

Laboratory/Practical

### Task Description

Three tests will be conducted during practical classes. These tests will be based on a combination of practical skills and relevant theoretical knowledge in:

1. Practical 1 (Bacteria and protists). Correctly set up a microscope, prepare a wet mount of a protist and draw the specimen on the microscope slide.

2. Practical 3 (Flowering plants), Collect a plant specimen, complete an appropriate plant label and identify the specimen to Family.
3. Practical 6 (Identifying insects). Identify an insect to Order and draw the specimen, labelling the morphological features used in the identification.

**Assessment Due Date**

Students will be assessed during the relevant practical session.

**Return Date to Students**

Students will be assessed as Pass/Fail during the practical session.

**Weighting**

Pass/Fail

**Assessment Criteria**

Ability to perform the laboratory exercises to the required standard.

**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

## Examination

**Outline**

Complete an invigilated examination.

**Date**

During the examination period at a CQUniversity examination centre.

**Weighting**

50%

**Length**

120 minutes

**Minimum mark or grade**

40%

**Exam Conditions**

Closed Book.

**Materials**

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

## Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the [Student Academic Integrity Policy and Procedure](#). This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

### Where can I get assistance?

For academic advice and guidance, the [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