



# **ENVR11014 *Environmental Monitoring***

## **Term 2 - 2023**

Profile information current as at 27/07/2024 10:31 am

All details in this unit profile for ENVR11014 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 05-07-23**

There is an extra cost associated with the residential school for this unit. Details will be available in Moodle (e.g. in the Welcome tile).

## General Information

### Overview

In Environmental Monitoring you will learn the basics of ecosystem science as well as the research and industry skills necessary to carry out surveys and research in natural and impacted ecosystems. Your study will focus on two iconic Australian ecosystems, the Great Barrier Reef and the Brigalow Belt. The field skills you acquire in this unit will enable you to perform both academic research and industry surveys in ecosystems anywhere in the world. You will apply your knowledge of ecosystems, and animal and plant biology to sample collection, vegetation surveys, animal trapping and identification. You will also begin to learn some basic project management skills including how to legally document your work and to prepare and plan for safe field work. The residential school in this unit will involve animal trapping and will abide by the approved ethics proposal that includes the destructive sampling of some fish and, if caught, the euthanasia of pest species (e.g. cats) as required by law. Students are advised to contact the unit coordinator if they have any concerns with regard to this aspect of the unit. There is an additional cost for the off-campus component of the residential school in this unit.

### 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

There are no requisites for this unit.

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 - 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. **Online Quiz(zes)**

Weighting: 30%

#### 2. **Laboratory/Practical**

Weighting: 20%

#### 3. **Report**

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 Students

**Feedback**

More Useful Feedback

**Recommendation**

Provide instant feedback for incorrect and correct answers on the moodle quizzes.

#### Feedback from Students

**Feedback**

More inclusive materials for Bachelor of Education students

**Recommendation**

Provide cognate materials from current High School biology and earth science units so that Bachelor of Education students can see more clearly how ecological and environmental knowledge will translate into better outcomes for secondary students.

## Unit Learning Outcomes

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

1. Describe the basic concepts of ecological populations and communities
2. Identify the defining characteristics of biomes and ecosystems
3. Measure biotic and abiotic characteristics of ecosystem communities using appropriate field methods
4. Collate, summarise and present data collected in the field
5. Adhere to Australian environmental and work, health and safety legislation.

## Alignment of Learning Outcomes, Assessment and Graduate Attributes



### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
<b>1 - Online Quiz(zes) - 30%</b>	•	•			
<b>2 - Laboratory/Practical - 20%</b>			•	•	•
<b>3 - Report - 50%</b>	•	•	•	•	

### 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 - Online Quiz(zes) - 30%	•	•	•							
2 - Laboratory/Practical - 20%		•			•			•		
3 - Report - 50%	•		•							

## Textbooks and Resources

### Textbooks

ENVR11014

#### Prescribed

##### **Ecology: The Economy of Nature**

Edition: 8th edn or above (2018)

Authors: Rick Relyea and Robert Ricklefs

W.H. Freeman & Company,

New York , NY , USA

ISBN: 9781319187729

Binding: Paperback

[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

**Nathan Brooks-English** Unit Coordinator

[n.english@cqu.edu.au](mailto:n.english@cqu.edu.au)

## Schedule

### - 25 Oct 2021

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

### Week 1 - 10 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Ecology and the Scientific Method Adaptations to Terrestrial and Aquatic Environments</b>	Chapter 1. Introduction: Ecology, Evolution, and the Scientific Method (p 1-29). Chapter 2. Adaptations to Aquatic Environments (p 30-53).	Text Book (any edition from 6th up should be ok) Ecology: The Economy of Nature by Robert E. Ricklefs and Rick Relyea W.H.Freeman & Co Ltd, United States ISBN:9781319187729 CQU Library 577.39 1/2018

### Week 2 - 17 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Random and Non-Random Factors Selection, Evolution and Limiting Factors.</b>	Chapter 7. Evolution and Adaptation (p 152 - 175).	

### Week 3 - 24 Jul 2023

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

**Life Histories and Reproductive Strategies.**

Chapter 8. Sex and Evolution.

Theory Quiz A will open Wednesday Week 3, 9:00AM AEST.

**Week 4 - 31 Jul 2023**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Competition and Dispersal. Populations and Population Growth.</b>	Chapter 11. Population Distributions (p 240 - 263). Chapter 12. Population Growth and Regulation (p 264 - 287). Chapter 16. Competition (p 360 - 405). Readings on Moodle.	Theory Quiz A will close on Wednesday Week 4, 11:59PM AEST. Residential School Payment due by Friday Week 4, 5:00PM AEST.

**Week 5 - 07 Aug 2023**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Survey and Sample Design &amp; Techniques Preparation Residential School Activities: Terrestrial and Aquatic sampling</b>	Readings on Moodle.	

**Vacation Week - 14 Aug 2023**

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

**Week 6 - 21 Aug 2023**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Residential School A No Lectures this week.</b>		Residential School A begins Monday, August 21st at 8:30AM at the Keppel Bay Marina and continues on Woppa (Great Keppel Island Hideaway resort) for five days/four nights of field work. Students return by ferry to Keppel Bay Marina at 2:30PM on August 25th. Students enrolled in CHEM11044 (Chemical Rxns) or other units with res schools and travelling from outside the Rockhampton region are encouraged to check timetabling and to enrol in the residential school that minimizes the travel you will need to undertake.

**Week 7 - 28 Aug 2023**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Biogeochemical Cycles Micrometeorological Monitoring &amp; the BOM</b>	Chapter 21. Movements of Elements in Ecosystems (p 481-505). Readings on Moodle.	Theory Quiz B will open Wednesday Week 7, 9:00AM AEST. Zoom Drop In For Residential School Recap for Residential School A students.

**Week 8 - 04 Sep 2023**

Module/Topic	Chapter	Events and Submissions/Topic
<b>Trophic Levels and Food Webs</b>	Chapter 18. Community Structure. (p406 - 433).	For students attending Residential School A, Residential School Results and Discussion are due Monday Week 8, 11:59PM AEST.

**Week 9 - 11 Sep 2023**

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

**Residential School B**  
**No Lectures this week.**

Residential School B begins Sunday, Sept 10th at 8:30AM at the Keppel Bay Marina and continues on Woppa (Great Keppel Island Hideaway resort) for five days/four nights of field work. Students return by ferry to Keppel Bay Marina at 2:30PM on Sept 14th. Students enrolled in CHEM11044 (Chemical Rxns) or other units with res schools and travelling from outside the Rockhampton region are encouraged to check timetabling and to enrol in the residential school that minimizes the travel you will need to undertake. Theory Quiz B will close on Wednesday Week 9, 11:59PM AEST.

#### Week 10 - 18 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Terrestrial Ecosystems and Biomes: Brigalow Belt.</b>	Chapter 6. Terrestrial and Aquatic Biomes (p 130 - 151).	Zoom Drop In For Residential School Recap for Residential School B students.

#### Week 11 - 25 Sep 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Palaeoclimate Proxies: Tree-rings and Climate</b>	Readings on Moodle	For students attending Residential School B, Residential School Results and Discussion is due Monday of Week 11, 11:59PM AEST.

#### Week 12 - 02 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
<b>Aquatic Ecosystems and Biomes: The Great Barrier Reef</b>	Chapter 6. Terrestrial and Aquatic Biomes (p 130 - 151).	Theory Quiz C will open Wednesday Week 12, 9:00AM AEST.

#### Review/Exam Week - 09 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
		Theory Quiz C will close on Wednesday Review/Exam Week, 11:59PM AEST.

#### Exam Week - 16 Oct 2023

Module/Topic	Chapter	Events and Submissions/Topic
--------------	---------	------------------------------

## Term Specific Information

There is an extra cost associated with the residential school for this unit.

## Assessment Tasks

### 1 Online Theory Quizzes

#### Assessment Type

Online Quiz(zes)

#### Task Description

These periodic quizzes are based on lecture and study material from previous weeks (so please revise the lecture and reading material associated with the weeks covered by the quiz).

For ALL students, Theory Quizzes open the Wednesday after the weeks' covered in the quiz (e.g. Theory Quiz A covers Weeks 1-3, so opens on Wednesday in Week 3) and is open for 1 week.

The Theory Quizzes are limited to **30 minutes for completion**; make sure to submit within the 30 minutes.

You can attempt each quiz once.

Questions are true/false, multiple choice, mix-and-match and other formats. Because the questions are drawn at random from a question bank, you will most likely receive different questions if you make a second attempt, and you will likely receive different questions from your peers. You must not share your quiz questions or answers with other students as this may disadvantage other students and it will be considered academic misconduct.

**Number of Quizzes**

3

**Frequency of Quizzes**

Other

**Assessment Due Date**

Theory Quiz A will close on Wednesday Week 4, 11:59PM AEST. Theory Quiz B will close on Wednesday Week 9, 11:59PM AEST. Theory Quiz C will close on Wednesday, Review/Exam Week 11:59PM AEST.

**Return Date to Students**

Theory quiz results will be made available to students upon completion of the quiz.

**Weighting**

30%

**Minimum mark or grade**

50% or above for the mean of the three quizzes.

**Assessment Criteria**

Correctness of answers.

**Referencing Style**

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

**Submission**

Online

**Learning Outcomes Assessed**

- Describe the basic concepts of ecological populations and communities
- Identify the defining characteristics of biomes and ecosystems

**Graduate Attributes**

- Communication
- Problem Solving
- Critical Thinking
- Critical Thinking

## 2 Field competencies checklist and workbook

**Assessment Type**

Laboratory/Practical

**Task Description**

Students will complete a pre-residential school online quiz by the Friday before Residential School A, and then a series of tasks in the field and associated activities during the residential school (10%). The quiz will cover material and knowledge needed to carry out field work effectively, ethically, and in a culturally appropriate manner.

Field work activities at the residential school will address animal monitoring skills (e.g. trapping and handling), aquatic monitoring skills, (e.g. water sampling for chemical analysis), vegetation monitoring skills (e.g. vegetation transects and specimen collection and ID), and peripheral skills (e.g. GPS and Chain of Custody). During or after each field activity, students will present their work to a supervisor for marking and feedback. It is important that students make sure that all required skills checks are completed and signed off on at the end of each activity or day. These sheets are due at the end of the residential school before students depart (10%).

**Assessment Due Date**

Pre-residential school online quiz will open on Friday, Week 5 and close the day before Residential School A begins. Skills

checks and workbooks will be checked/marked during or at the end of each activity during the residential school. It is the student's responsibility to make sure all checks/markings is completed at the time indicated in the field workbook.

### **Return Date to Students**

Pre-residential school online quiz will be returned immediately. Students will be marked/checked off on skills and workbooks throughout the residential school.

### **Weighting**

20%

### **Minimum mark or grade**

50%

### **Assessment Criteria**

Pre-residential school online quiz questions cover material provided on moodle and in lecture and must be answered correctly.

The assessment criteria for each field work activity will vary, but assessment criteria will generally revolve around the following:

1. Safety;
2. Accuracy;
3. Completeness;
4. Compliance;
5. Active participation and teamwork within the group.

After receiving feedback, and at the instructors discretion and within the limits of field work, students will be given an opportunity to demonstrate proficiency in skills they were not able to receive full marks on in the field or workbook.

### **Referencing Style**

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

### **Submission**

Offline Online

### **Submission Instructions**

Use the link provided on moodle to access the pre-residential school online quiz. During or after each field activity, students will present their work to a supervisor for marking and feedback. It is important that students make sure that all required skills checks are completed at the end of each activity or day. Return the completed checklist to Drs Nathan English or Guy Carton before departing the Residential School.

### **Learning Outcomes Assessed**

- Measure biotic and abiotic characteristics of ecosystem communities using appropriate field methods
- Collate, summarise and present data collected in the field
- Adhere to Australian environmental and work, health and safety legislation.

### **Graduate Attributes**

- Problem Solving
- Team Work
- Ethical practice

## **3 Residential School Results and Discussion**

### **Assessment Type**

Report

### **Task Description**

During your ENVR11014 residential you will undertake survey and monitoring field work activities that require the application of scientific and industry standard environmental monitoring methodologies and technologies. These activities will be across three areas: 1) terrestrial animal; 2) brackish-water aquatic; and 3) terrestrial vegetation. Following the residential school you will use the data collected to write up and present the results of each activity and then discuss those results with reference to accepted ecological theory(ies). Written reports must use both figures, tables and text and include a

relevant discussion around each of the field work activities (600 words  $\pm 10\%$  per activity report, 1800 words  $\pm 10\%$  total). To assist you with the task of writing up the results, general assistance with the interpretation and analysis of data will be provided at the end of field work activities.

### **Assessment Due Date**

For students attending Residential School A, Residential School Results and Discussion are due Monday of Week 8, 11:59PM AEST. For students attending Residential School B, Residential School Results and Discussion are due Monday Week 11, 11:59PM AEST.

### **Return Date to Students**

Both Res School A and Res School B assessments will be returned to students during Exam Week.

### **Weighting**

50%

### **Minimum mark or grade**

50%

### **Assessment Criteria**

The Residential School Results and Discussion will be marked on:

1. Completeness (relevant observations and results presented from all three activities);
2. Clarity, grammar, punctuation and organisation;
3. Presentation of figures and tables (figures and tables should be publication ready);
4. Correct inline referencing of figures/tables;
5. Discussion of the results (are all the results included discussed?);
6. Appropriate application of ecological theory to the results in the discussion;
7. At least two appropriate and correctly-cited references with appropriate author-date citation (look up "parenthetical referencing" *i.e.* Harvard Referencing).

### **Referencing Style**

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

### **Submission**

Online

### **Submission Instructions**

Submit a Word document (or a format compatible with TurnItIn) with all relevant figures, tables, appendices, and text. Submission must be through Moodle.

### **Learning Outcomes Assessed**

- Describe the basic concepts of ecological populations and communities
- Identify the defining characteristics of biomes and ecosystems
- Measure biotic and abiotic characteristics of ecosystem communities using appropriate field methods
- Collate, summarise and present data collected in the field

### **Graduate Attributes**

- Communication
- 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