



# ZOOL12009 *Invertebrate Zoology*

## Term 1 - 2024

Profile information current as at 28/04/2024 10:16 am

All details in this unit profile for ZOOL12009 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 21-03-24

The timing of end-of-term quiz for ZOOL12009 clashes with the same assessment for BIOL12112 (identified in week 2 of term). This proposed correction would delay the quiz for ZOOL12009 by 24 hours.

Currently, there is a timing clash for the quiz scheduled Monday 3rd June. To avoid this clash, the **quiz will now be open at 9am Tuesday 4th June, and close at 9am Wednesday 5th June.**

This will be communicated to students via Moodle assessment details, Moodle announcements, and in the live weekly lectures.

## General Information

### Overview

The invertebrates are the largest and most diverse group of animals on Earth, being found in all environments and habitats. This unit provides an overview of the biology, ecology, and taxonomy of the various invertebrate phyla, linking adaptation and evolutionary history to understand the origins and proliferation of this great diversity of life.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Prerequisite BIOL11099 Living Systems or BIOL11102 Life Science Laboratory

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
- 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. **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 feedback

##### Feedback

One student suggested the unit would benefit from re-instating the on-campus residential school.

##### Recommendation

The residential school was 'flipped' out to students during the COVID pandemic, and offers advantages over on-campus offerings. The pros and cons of each approach will be discussed with the Head of Course for the 2024 offering.

#### Feedback from SUTE feedback

##### Feedback

One student suggested the format of the final assessment (online quiz) could be reviewed and made easier.

##### Recommendation

The format and degree of difficulty of the final assessment has not been identified as an issue in recent offerings, but this assessment (and all within the unit) will be reviewed as part of a planned 2024 update of the unit.

#### Feedback from SUTE feedback

##### Feedback

One student found the lectures enjoyable and the marking feedback useful for their learning.

##### Recommendation

This feedback is always welcome, with the level of lecturing enthusiasm and assessment feedback to be maintained into 2024.

## Unit Learning Outcomes

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

1. Define terminology associated with the study of invertebrate zoology
2. Describe the structural and functional organisation of animals from the various invertebrate phyla
3. Explain the evolutionary history of the invertebrates, including their adaptations to particular environments and their ecology
4. Identify the major invertebrate taxa and explain the evolutionary and physiological basis for the taxonomic classification of these animals
5. Acquire practical skills in the study of invertebrates by conducting basic scientific research on invertebrate abundance, distribution, behaviour, and ecology in both field and laboratory settings.

## 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 - Written Assessment - 20%</b>	•	•	•		

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

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

### 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

**Andrew Irving** Unit Coordinator

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

## Schedule

### Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
1. Unit overview 2. Why study invertebrates?	Study guide chapter 1	

### Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
3. Invertebrates and the environment 4. Taxonomy and evolution of the invertebrates	Study guide chapters 2 & 3	

### Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
5. Protozoans 6. Porifera	Study guide chapters 4 & 5	

### Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
7. Cnidarians 8. Coral reefs	Study guide chapter 6	

### Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
9. Platyhelminthes 10. Of worms and coelomes	Study guide chapters 7 & 8	

### Vacation Week - 08 Apr 2024

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

**Week 6 - 15 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
11. Arthropoda part 1: Introduction 12. Arthropoda part 2: Uniramia	Study guide chapter 9	<b>Short essay: How do 'lower' invertebrates affect human populations?</b> Due: Week 6 Friday (19 Apr 2024) 11:45 pm AEST

**Week 7 - 22 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
13. Arthropoda part 3: Crustacea 14. Annelida	Study guide chapters 9 & 10	

**Week 8 - 29 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
15. Mollusca part 1: Introduction 16. Mollusca part 2: Gastropoda	Study guide chapter 11	

**Week 9 - 06 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
17. Mollusca part 3: Cephalopoda	Study guide chapter 11	

**Week 10 - 13 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
18. The Lophophorates 19. Echinodermata	Study guide chapters 12 & 13	

**Week 11 - 20 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
20. Hemichordates & Chordates	Study guide chapter 14	<b>Practical report: Invertebrate research project</b> Due: Week 11 Friday (24 May 2024) 11:45 pm AEST

**Week 12 - 27 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
21. Unit review		

**Review/Exam Week - 03 Jun 2024**

Module/Topic	Chapter	Events and Submissions/Topic
		<b>End-of-term Online Quiz</b> Due: Review/Exam Week Monday (3 June 2024) 9:00 am AEST

**Exam Week - 10 Jun 2024**

Module/Topic	Chapter	Events and Submissions/Topic

## Term Specific Information

This unit comprises a series of weekly lectures and an 'at-home' practical assignment in lieu of an on-campus residential school. In 2024, lectures will be delivered in person on the Rockhampton campus (building 32, room LG.15), with simultaneous online livestreaming. Recordings of all lectures will be provided on the unit's Moodle page soon after delivery, with additional live Zoom meetings scheduled throughout term for informal Q&A (see Moodle for the timetable of these informal sessions). The practical assignment for this unit will run in conjunction with *ad hoc* live Zoom sessions and pre-recorded videos, which will provide additional instructions and allow you to get feedback on your progress throughout the term. The unit's Moodle page will be the key access point for all relevant information and communication regarding all aspects of the unit.

## Assessment Tasks

# 1 Short essay: How do 'lower' invertebrates affect human populations?

## Assessment Type

Written Assessment

## Task Description

This written assignment requires you to complete a concise 1000 word essay, and is worth 20 % of your unit grade. "Lower invertebrates", so called because they have persisted since the early history of life on Earth, provide many benefits to humans (e.g. medical applications, food and resources, understanding how life on Earth 'works', etc.), as well as many detriments (infections, parasites, food spoilage, etc.). **Your task is to summarise how a lower invertebrate (as an individual species or a higher taxonomic level) contributes to the benefit OR detriment of human populations.** You are free to choose any invertebrate/outcome/field of research that interests you, but ensure your topic is based on a 'lower' invertebrate. This includes the protozoans, poriferans, cnidarians, platyhelminthes, nematodes and nemertean, which will be described in detail in lectures. Additional information regarding assessment requirements, hints, and submission guidelines will be provided on the unit's Moodle site.

## Assessment Due Date

Week 6 Friday (19 Apr 2024) 11:45 pm AEST

Submit your work as a Word document (.doc or .docx) via Moodle

## Return Date to Students

Week 8 Friday (3 May 2024)

Your work will be marked and returned to you via Moodle

## Weighting

20%

## Minimum mark or grade

50 %

## Assessment Criteria

This concise essay assignment will be marked against the following criteria:

- A clear and informative title (5% of marks)
- An informative yet concise background/introduction to the topic (10%)
- A descriptive, well-structured, and clearly resourced (referenced) body section of text, describing the key features/traits of the invertebrate chosen, and how it affects human populations (25%)
- A concluding paragraph that summarises the essay without repeating the points already presented (15%)
- Ensuring a 'lower' invertebrate is discussed (5%)
- Citing references correctly within the text (5%)
- Providing a reference list in Harvard format, comprising 5 to 10 sources (see instructions on Moodle for additional information about references) (10%)
- Correct spelling and grammar (10%)
- A clear and logical structure and presentation of your points (10%)
- Keeping within word limits (1000 words +/- 10%) (5%)

## Referencing Style

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

## Submission

Online

## Submission Instructions

Submit your work as a Word document (.doc or .docx) via Moodle

## Learning Outcomes Assessed

- Define terminology associated with the study of invertebrate zoology
- Describe the structural and functional organisation of animals from the various invertebrate phyla
- Explain the evolutionary history of the invertebrates, including their adaptations to particular environments and their ecology

## Graduate Attributes

- Communication
- Critical Thinking
- Information Literacy



- Information Technology Competence

## 2 Practical report: Invertebrate research project

### Assessment Type

Practical Assessment

### Task Description

This practical assessment comprises a written report summarising the practical work you will complete during the term. This assessment is worth 30% of your unit grade. This assessment will require you to complete an 'at-home' research project involving invertebrates. You will be given guidance in the choice of the type of project to do, but you will need to demonstrate that you have a clear hypothesis with an appropriate test and interpretation, regardless of your final choice. Instruction, guidance and feedback will be available throughout the term via pre-recorded videos uploaded to Moodle as well as regular live Zoom sessions (see Moodle for scheduled dates). This assignment will combine your conceptual and planning skills with further development of skills in practical field sampling, measurement, data analysis and communication.

### Assessment Due Date

Week 11 Friday (24 May 2024) 11:45 pm AEST

Submit your work as a Word document (.doc or .docx) via Moodle

### Return Date to Students

Review/Exam Week Friday (7 June 2024)

Your work will be marked and returned to you via Moodle

### Weighting

30%

### Minimum mark or grade

50 %

### Assessment Criteria

Your practical report will be assessed against the following criteria:

- Title (short, punchy and informative) (6.67% of marks)
- Abstract (clear, concise summary of context, hypothesis, results and conclusions) (10%)
- Introduction (Relevant context provided, starting with a broad focus of observations and models and narrowing to a clear, well-articulated hypothesis for a manipulative experiment) (16.67%)
- Methods (adequate description and justification of methods used so experiment could be repeated) (16.67%)
- Results (Concise description of results, ordered logically and presented in graphs/tables, as well as basic statistical analyses) (16.67%)
- Discussion (Logical structure that discusses the key results and their meaning before placing results in a broader context and identifying biases/improvements/further fields of study etc) (16.67%)
- References (cited appropriately throughout text, 10 minimum, no web pages unless of the data repository-type) (6.67%)
- Correct spelling and grammar (6.67%)
- Word count (keeping to guidelines provided in each section) (3.33%)

### Referencing Style

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

### Submission

Online

### Submission Instructions

Submit your work as a Word document (.doc or .docx) via Moodle

### Learning Outcomes Assessed

- Define terminology associated with the study of invertebrate zoology
- Describe the structural and functional organisation of animals from the various invertebrate phyla
- Identify the major invertebrate taxa and explain the evolutionary and physiological basis for the taxonomic classification of these animals
- Acquire practical skills in the study of invertebrates by conducting basic scientific research on invertebrate abundance, distribution, behaviour, and ecology in both field and laboratory settings.

### Graduate Attributes

- Communication

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

### 3 End-of-term Online Quiz

#### Assessment Type

Online Quiz(zes)

#### Task Description

You are required to complete and end-of-term online quiz that is worth 50 % of your unit grade. The quiz will be akin to a traditional examination where you will be asked multiple questions that may relate to any element of the unit content presented during term. At 9am on Monday 3rd of June (during the scheduled University review/exam week), the quiz will open and be available for 24 hours, during which time you will have a 3 hour block within which to complete the assessment (the 3 hours start when you choose to start the quiz). The quiz will automatically close at the end of your 3 hours, or at the end of the 24-hour opening period, whichever is sooner (in other words, make sure you start the quiz with enough time to get the full 3 hours access). Additional details and practice questions will be provided throughout term and on Moodle.

#### Number of Quizzes

1

#### Frequency of Quizzes

Other

#### Assessment Due Date

Review/Exam Week Monday (3 June 2024) 9:00 am AEST

Complete your quiz on Moodle by clicking the appropriate assessment link

#### Return Date to Students

Exam Week Friday (14 June 2024)

Your quiz will be marked and returned to you on Moodle

#### Weighting

50%

#### Minimum mark or grade

50 %

#### Assessment Criteria

Your grade in this assignment will be determined through the written demonstration of your grasp of the entire unit's content. Each question in the quiz will have a certain number of marks allocated to it. Questions will be a combination of short- and long-answer format, as well as short-essay style questions that give you the chance to show your deeper understanding of a particular topic.

#### Referencing Style

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

#### Submission

Online

#### Submission Instructions

Complete your quiz on Moodle by clicking the appropriate assessment link

#### Learning Outcomes Assessed

- Define terminology associated with the study of invertebrate zoology
- Describe the structural and functional organisation of animals from the various invertebrate phyla
- Explain the evolutionary history of the invertebrates, including their adaptations to particular environments and their ecology
- Identify the major invertebrate taxa and explain the evolutionary and physiological basis for the taxonomic classification of these animals

#### 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