



## UNSW Course Outline

# BIOS2031 Biology of Invertebrates - 2024

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## General Course Information

Course Code : BIOS2031

Year : 2024

Term : Term 3

Teaching Period : T3

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Biological, Earth and Environmental Sciences

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

*Are Invertebrates Saving The World?*

*Over the ten weeks of BIOS2031 students will learn about the value of invertebrates in nature. In*

the course students will learn about how and why invertebrates are critical to the natural world and the role of invertebrates in life on earth.

***On completing the course, students will have the knowledge to*** recognize locations, habitats, and scales at which invertebrates occur and have experience in communicating the diversity and the role of invertebrate life.

***You will have learned how to find, assess, and identify*** invertebrates in nature (terrestrial, aquatic, and marine ecosystems).

***You will hear from academic and industry experts*** about how environmental monitoring programs study invertebrates, and what is needed to interpret invertebrate ecology and biology as a function of healthy ecosystems.

***Some compelling challenges*** that professional invertebrate biologists are working to answer include;

- Will there be enough food in the future for everyone?
- When is environmental repair/rehabilitation/restoration finished?
- Are we losing species before we know what/who they are?
- How healthy are our natural environments?
- How can understanding invertebrate biology help save lives?

***In completing BIOS031 Biology of Invertebrates*** students will have an understanding of the diversity of invertebrates, the biology of invertebrates, and the critical role that invertebrates play in the future of life on earth. Students will gain hands-on experience in Invertebrate Biology through weekly practicals and a 2-day field trip undertaken in week 6 at Chowder Bay in Sydney.

## Course Aims

BIOS2031 Biology of Invertebrates aims to give students new insights into invertebrate life and provide students with a versatile framework for future learning, research, and application of invertebrate biology within research and professional settings. This course is presented as a series of lectures and hands-on learning experiences where students will gain practical skills in identifying and studying invertebrates in nature. Students will meet lecturers and experts undertaking research and working in professional roles related to the organisms you are learning about. Weekly in-person practical classes include examining living and preserved specimens, applying techniques for invertebrate identification and students will investigate the characteristic features of different invertebrate organisms. During the field-based survey students will identify and quantify invertebrates in nature, apply invertebrate identification skills and learn about the

methods applied for invertebrate diversity assessments.

This course involves the:

1. discussion the diversity of invertebrates and their defining features
2. Utilization of an array of protocols and tools to identify invertebrate life, and
3. evaluation the role of invertebrate groups in life on earth.

## Course Learning Outcomes

Course Learning Outcomes
CLO1 : Classify a range of invertebrate species into their major taxonomic groupings and describe the morphology and diagnostic characters of the major taxa.
CLO2 : Describe the habitats from which different invertebrate phyla occur and discuss how the organisms' structure, mode of feeding, reproduction and development influence their biology.
CLO3 : Explain and effectively communicate to different audiences how detailed information on the biology of invertebrates is applied to environmental and biological sciences.
CLO4 : Evaluate how knowledge of invertebrate biology can be applied to solving environmental, agricultural, and medicinal problems.

Course Learning Outcomes	Assessment Item
CLO1 : Classify a range of invertebrate species into their major taxonomic groupings and describe the morphology and diagnostic characters of the major taxa.	<ul style="list-style-type: none"><li>• Field survey report</li><li>• Popular Science – Communicating Connections in Nature</li><li>• Practical Skills Assessment</li></ul>
CLO2 : Describe the habitats from which different invertebrate phyla occur and discuss how the organisms' structure, mode of feeding, reproduction and development influence their biology.	<ul style="list-style-type: none"><li>• Field survey report</li><li>• Popular Science – Communicating Connections in Nature</li><li>• Practical Skills Assessment</li></ul>
CLO3 : Explain and effectively communicate to different audiences how detailed information on the biology of invertebrates is applied to environmental and biological sciences.	<ul style="list-style-type: none"><li>• Final exam</li><li>• Field survey report</li><li>• Popular Science – Communicating Connections in Nature</li></ul>
CLO4 : Evaluate how knowledge of invertebrate biology can be applied to solving environmental, agricultural, and medicinal problems.	<ul style="list-style-type: none"><li>• Final exam</li></ul>

## Learning and Teaching Technologies

Moodle - Learning Management System

# Assessments

## Assessment Structure

Assessment Item	Weight	Relevant Dates
Field survey report Assessment Format: Individual	25%	Post Date: 18/10/2024 05:00 PM
Popular Science – Communicating Connections in Nature Assessment Format: Individual Short Extension: Yes (2 days)	15%	Due Date: 07/11/2024 05:00 PM
Practical Skills Assessment Assessment Format: Individual	25%	
Final exam Assessment Format: Individual	35%	

## Assessment Details

### Field survey report

#### Assessment Overview

Assessing the diversity and abundance of invertebrate populations (known as a biodiversity assessment or a BioBlitz) and communicating the results of those assessments, is used within many professional settings and requires important practical and critical skills. Professional settings where these skills are required include environmental impact assessment, environmental consultancy, museum curation, environmental monitoring, environmental education and outreach, and also research.

Here students will experience and undertake an ecological survey of invertebrate populations during a field excursion to Chowder Bay, Sydney Harbour. While at Chowder Bay students will undertake an invertebrate BioBlitz in groups and work together to identify and quantify invertebrate populations across the terrestrial, aquatic, intertidal and marine habitat of the area.

The stages of undertaking and reporting a field survey that students will experience include:

1. Project planning and design
2. Project tool and method assessment and application
3. Invertebrate collection, identification, and quantification
4. Data compilation and visualization
5. Report writing, educational resource development and communication results.

Each student's individual reports will incorporate several modes of communication to present the results to multiple audiences, such as interested community members (preparing invertebrate biology educational infographics) and scientifically literate audience (detailed scientific report for scientists and environmental managers).

Fieldwork is undertaken over 2 days in week 6, the report can be developed during weeks 7 and 8. The completed report is due for submission in week 8. Feedback will be provided in week 10.

### Course Learning Outcomes

- CLO1 : Classify a range of invertebrate species into their major taxonomic groupings and describe the morphology and diagnostic characters of the major taxa.
- CLO2 : Describe the habitats from which different invertebrate phyla occur and discuss how the organisms' structure, mode of feeding, reproduction and development influence their biology.
- CLO3 : Explain and effectively communicate to different audiences how detailed information on the biology of invertebrates is applied to environmental and biological sciences.

### Detailed Assessment Description

Assessing the diversity and abundance of invertebrate populations (known as a biodiversity assessment or a BioBlitz) and communicating the results of those assessments, is used within many professional settings and requires important practical and critical skills. Professional settings where these skills are required include environmental impact assessment, environmental consultancy, museum curation, environmental monitoring, environmental education, and outreach, and also research.

Here you will experience and undertake an assessment from an ecological survey of invertebrate populations during a field excursion to Chowder Bay, Sydney Harbour. While at Chowder Bay we will work together to undertake a BioBlitz identifying and quantifying invertebrate populations across the terrestrial, aquatic, intertidal and marine habitat of the area.

The stages of undertaking and reporting a field survey that you will experience include:

- Project planning and design
- Project tool and method assessment and application
- Invertebrate collection, identification, and quantification
- Data compilation and visualization
- Report writing, educational resource development and communication results.

Your report will incorporate multiple modes of communication for your results for different audiences, here you will

1. present your findings to your peers outlining the context of how the study may be used to make decisions for management of ecosystems;
2. a short report in the style of a scientific report or paper.

**You are required to submit your report using Moodle at the completion of the field trip and your report will include two different forms of communication to provide different information.**

#### **Assignment submission Turnitin type**

This is not a Turnitin assignment

#### **Generative AI Permission Level**

##### **Planning/Design Assistance**

You are permitted to use generative AI tools, software or services to generate initial ideas, structures, or outlines. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e., what is generated by the tool, software or service should not be a part of your final submission. You should keep copies of your iterations to show your Course Authority if there is any uncertainty about the originality of your work.

If your Convenor has concerns that your answer contains passages of AI-generated text or media that have not been sufficiently modified you may be asked to explain your work, but we recognise that you are permitted to use AI generated text and media as a starting point and some traces may remain. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.

For more information on Generative AI and permitted use please see [here](#).

AI maybe used for editing and planning purposes. The assignment is submitted at the completeion of the field work exercise.

## **Popular Science – Communicating Connections in Nature**

#### **Assessment Overview**

While they often go unnoticed, invertebrates influence the lives of humans in many ways. Invertebrates are key to life on earth and are part of daily life. Invertebrates may also be damaging pests in agricultural systems, vectors of important diseases (e.g., mosquitoes carrying malaria), an inspiration for design or the source of irrational fears (e.g., spiders and arachnophobia). As well as invertebrates being vital to life on earth, personal connections to nature have been shown to benefit our own health, happiness, and well-being.

Here students are asked to explore their own connection to invertebrates through natural places they enjoy or are interested in. Thinking about a natural place that is valuable to each individual, students are asked to consider the invertebrates that inhabit those locations. In assessment 1 students will communicate to a broad audience, in the style of popular science, aiming to inform the audience of:

- \* The key morphological and biological features on the invertebrate or invertebrate group featured.

- \* The links between the biology of invertebrates and humans.

- \* Why the invertebrate chosen is interesting or unique, or has an important connection to humans or human society.

Students will gain experience in independent research, synthesis of information, and engaging a broad audience in accurate scientific information.

Students are required to demonstrate 4 key criteria in undertaking this assessment:

*(each submission doesn't need to follow these in order, but all 4 must be included and each is scored)*

1. Identification of invertebrate or invertebrate group *(including taxonomic names and common names)*
2. Demonstrate/communicate the invertebrate's morphology and biology that reflects its place in nature.
3. Highlight the invertebrate's connection to humans or society)
4. Explain your connection to the invertebrate *(why did was this invertebrate chosen and what did the student discover about why the invertebrate matters)*

The assessment can be developed during weeks 1-4 and is due for submission in Week 4. Feedback will be provided in week 6.

### Course Learning Outcomes

- CL01 : Classify a range of invertebrate species into their major taxonomic groupings and describe the morphology and diagnostic characters of the major taxa.
- CL02 : Describe the habitats from which different invertebrate phyla occur and discuss how the organisms' structure, mode of feeding, reproduction and development influence their biology.
- CL03 : Explain and effectively communicate to different audiences how detailed information

on the biology of invertebrates is applied to environmental and biological sciences.

### **Assignment submission Turnitin type**

This is not a Turnitin assignment

### **Generative AI Permission Level**

#### **Simple Editing Assistance**

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.

If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.

For more information on Generative AI and permitted use please see [here](#).

In this assessment you need to demonstrate your own personal connection to the subject you have chosen. AI should only be used for editing assistance.

## **Practical Skills Assessment**

### **Assessment Overview**

Each week you will be undertaking practical classes that will expose you to a great range of live and preserved invertebrates. These classes are divided into several tasks that you will undertake to learn invertebrate biology (including diversity, structure, feeding, reproduction and development, behavioral observation/experiment) of the invertebrate phyla with review in the course. Within each class there are several tasks which may involve; 1) learning the scientific and common names of invertebrates 2) providing labelled diagrams of an organism or structure, or 4) providing illustrated notes on a particular aspect of feeding, reproduction or behaviour.

Your understanding of these tasks will be assessed in the practical skills assessment in the final practical session held in week 10. Here you will have specimens and displays from the course, along with new displays, which assess students, ability to identify invertebrates, knowledge of the distinguishing characters of the major taxonomic groups, and knowledge of the structure and function of invertebrates covered in the practical classes.

Marks will be provided one week after the exam. Feedback is available through inquiry with the

course convenor.

### **Course Learning Outcomes**

- CL01 : Classify a range of invertebrate species into their major taxonomic groupings and describe the morphology and diagnostic characters of the major taxa.
- CL02 : Describe the habitats from which different invertebrate phyla occur and discuss how the organisms' structure, mode of feeding, reproduction and development influence their biology.

### **Generative AI Permission Level**

#### **No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

## **Final exam**

### **Assessment Overview**

The final examination will assess each students understanding of the practical and theoretical information provided within the course.

Through a selection of short answer questions, the final exam will assess:

1. knowledge of how invertebrate biology is applied and used to understand nature; and
2. evaluate the role of invertebrates, and invertebrates' biology, in solving environmental, agricultural, and/or medicinal problems.

The exam is held during the formal examination period and is 2 hours in duration.

Feedback is available through inquiry with the course convenor.

### **Course Learning Outcomes**

- CL03 : Explain and effectively communicate to different audiences how detailed information on the biology of invertebrates is applied to environmental and biological sciences.
- CL04 : Evaluate how knowledge of invertebrate biology can be applied to solving environmental, agricultural, and medicinal problems.

### **Generative AI Permission Level**

#### **No Assistance**

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

## General Assessment Information

### Grading Basis

Standard

## Course Schedule

### Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

### General Schedule Information

In the course you will need to

- \* Review 2 online lectures each week before attending the course practical session held each Friday
- \* Attend the course practical session each Friday
- \* During the practical session you will join in a discussion and presentation from a BEES researcher related to the practical applications of the weeks topic; you will also have the opportunity to undertake a laboratory session from which you will prepare a laboratory records; and lastly you will also be able to take part in assessment design studios where you will be able to prepare your course assessments and have assistance with your assessments and gain feedback prior to submission of the assessment tasks.
- \* Attend field work in week 6 to complete an assessment

## Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Tracy Ainsworth					Yes	Yes

# Other Useful Information

## Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

## Academic Honesty and Plagiarism

**Referencing** is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

**Academic integrity** is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

## Submission of Assessment Tasks

### Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

***Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.***

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

### Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

**Important note:** UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

### Faculty-specific Information

#### Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)