COURSE OUTLINE

# ENS213 Invertebrate Biology and Ecology

**School:** School of Science, Technology and Engineering

2022 | Semester 1

UniSC Sunshine Coast
UniSC Moreton Bay
UniSC Fraser Coast

BLENDED LEARNING

Most of your course is on campus but you may be able to do some components of this course online.

*Please go to usc.edu.au for up to date information on the teaching sessions and campuses where this course is usually offered.*

## 1. What is this course about?

### 1.1. Description

Invertebrates are critical in providing ecosystem goods and services vital to the biosphere. This course builds on your introductory knowledge of the diversity, form and function of aquatic and terrestrial invertebrates. You explore the evolution, anatomy, and adaptations of all the invertebrate phyla. You are introduced to their taxonomic diversity, distribution, adaptations to the environment, population management, conservation and pest status. Through local field projects in field ecology, you learn the methods and skills needed to study invertebrates.

### 1.2. How will this course be delivered?

| ACTIVITY | HOURS | BEGINNING WEEK | FREQUENCY |
|---|---|---|---|
| **BLENDED LEARNING** | | | |
| **Learning materials** – Asynchronous Online Material | 2hrs | Week 1 | 13 times |
| **Laboratory 1** – On Campus | 2hrs | Week 1 | 13 times |
| **Fieldwork** – Point Cartwright rocky shore half day on week 9 or 10 | 5hrs | Not applicable | Once Only |

### 1.3. Course Topics

1) Evolution and phylogeny of the invertebrates;
2) Ecological roles of invertebrates;
3) The diversity of invertebrate groups;
4) Adaptations to the environment;
5) Anatomical, physiological and ecological characteristics;
6) Economic importance of invertebrates: pests and pollinators;
7) Parasites, and vectors of disease

## 2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

## 3. What is the unit value of this course?

12 units

## 4. How does this course contribute to my learning?

| COURSE LEARNING OUTCOMES<br>On successful completion of this course, you should be able to... | | GRADUATE QUALITIES<br>Completing these tasks successfully will contribute to you becoming... |
|---|---|---|
| 1 | Demonstrate and apply knowledge about i) diversity & main diagnostic characters of each phylum ii) adaptations to the environment iii) links between form and function iv) the life cycles of parasites and their health and ecological impacts v) ecological roles of invertebrates. | Knowledgeable |
| 2 | Argue with evidence how the rich diversity of invertebrates and their adaptations seen today are the product of multiple processes in evolution. | Knowledgeable |
| 3 | Assemble and present a thematic classified collection of invertebrate species that illustrates the diversity of the group and their adaptations to the environment. | Creative and critical thinker |

## 5. Am I eligible to enrol in this course?

Refer to the UniSC Glossary of terms for definitions of “pre-requisites, co-requisites and anti-requisites”.

### 5.1. Pre-requisites

SCI102

### 5.2. Co-requisites

Not applicable

### 5.3. Anti-requisites

Not applicable

### 5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

## 6. How am I going to be assessed?

### 6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

### 6.2. Details of early feedback on progress

A formative practice practical exam will be given in week 4 during lab hours.

## 6.3. Assessment tasks

| DELIVERY MODE | TASK NO. | ASSESSMENT PRODUCT | INDIVIDUAL OR GROUP | WEIGHTING % | WHAT IS THE DURATION / LENGTH? | WHEN SHOULD I SUBMIT? | WHERE SHOULD I SUBMIT IT? |
|---|---|---|---|---|---|---|---|
| All | 1 | Practical / Laboratory Skills | Individual | 20% | 2 hrs | Refer to Format | In Class |
| All | 2 | Report | Individual | 35% | Minimum of 15 species | Refer to Format | Online Submission |
| All | 3 | Examination - Centrally Scheduled | Individual | 45% | 2hrs | Exam Period | Exam Venue |

### All - Assessment Task 1: Practical Exam

| | |
|---|---|
| **GOAL:** | Demonstrate your understanding of the role of evolutionary processes resulting in invertebrate diversity and adaptations to environments. |
| **PRODUCT:** | Practical / Laboratory Skills |
| **FORMAT:** | Submit: A formative, practice practical exam during lab class in week 4 and a summative practical exam inweek 6.<br>This assessment will comprise two components. The first, a short (30 minute) formative, practice practical exam in week 4, followed by a summative two (2) hour practical exam in week 6. Both are scheduled during laboratory class and consist of short-answer questions. The questions will be based mainly on the material covered in the first five weeks of laboratory classes, supplemented with material presented during the learning materials. |
| **CRITERIA:** | **No.** — **Learning Outcome assessed**<br>1 Demonstrate and apply knowledge about invertebrates; — 1<br>2 Argue with evidence how the rich diversity of invertebrates and their adaptations seen today are the product of multiple processes in evolution. — 2 |

### All - Assessment Task 2: Invertebrate Field Guide

| | |
|---|---|
| **GOAL:** | Demonstrate your ability to work scientifically by applying, under guidance, field methods and theoretical knowledge to illustrate the diversity of invertebrates and their adaptations to the environment. |
| **PRODUCT:** | Report |
| **FORMAT:** | You are required to assemble and present a field guide of local invertebrates;A minimum of 15 species is required;The collection should be organised around a taxonomic theme (e.g. different butterflies, insects, crustaceans, etc.), a habitat theme (e.g. diversity of rocky shore invertebrates), or an evolutionary/anatomical theme (e.g. evolution of organs for movement/feeding).Each specimen must be accompanied by a detailed taxonomic classification, exact geo-location (from GPS or Google Earth), a detailed description of the microhabitat it was collected from, and a list of the adaptations that the species has for living within that microhabitat;Students are required to take their own photographs/videos of all specimens. The presentation medium can be any of the following: document or book, website (use free editing and hosting services), Facebook page, Powerpoint file, or a YouTube video. NO venomous or endangered species, NO cephalopods (i.e. squid, octopuses, cuttlefish) are to be collected under any circumstances. |

| CRITERIA: | No. | | Learning Outcome assessed |
|---|---|---|---|
| | 1 | Demonstrate and apply knowledge about invertebrates: Species identification & taxonomic classification | 1 |
| | 2 | Assemble and present a thematic-classified collection of invertebrate species that illustrates the diversity of the group and their adaptations to the environment:<br>a) Habitat descriptions<br>b) Adaptations<br>c) Presentation<br>d)Thematic focus and coherence | 3 |
| | 3 | Demonstrate creative thinking in identifying your theme, assembling the collection and presenting it. | 1 2 3 |

**All - Assessment Task 3:** Written Exam

| | |
|---|---|
| GOAL: | Demonstrate assimilation and application of knowledge gathered throughout semester in learning materials and practicals. |
| PRODUCT: | Examination - Centrally Scheduled |
| FORMAT: | A two (2) hour written exam, consisting of multiple choice and short-answer questions. The questions will be based mainly on the material covered in the theory component of the course (i.e. learning materials), supplemented with material presented during the laboratory and field activities |

| CRITERIA: | No. | | Learning Outcome assessed |
|---|---|---|---|
| | 1 | Demonstrate knowledge about invertebrate classification, anatomy, phylogeny, ecology, reproduction, life cycles, adaptations and their roles in the creation and delivery of ecosystems goods and services | 1 |
| | 2 | Argue with evidence how the rich diversity of invertebrates and their adaptations seen today are the product of multiple processes in evolution | 2 |

## 7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Student workload is calculated at 12.5 learning hours per one unit.

## 8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Canvas site– Please log in as soon as possible.

### 8.1. Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

| REQUIRED? | AUTHOR | YEAR | TITLE | EDITION | PUBLISHER |
|---|---|---|---|---|---|
| Required | Jan Pechenik | 2014 | Biology of the Invertebrates | 7 | McGraw-Hill Education |

### 8.2. Specific requirements

Nil

## 9. How are risks managed in this course?

Health and safety risks for this course have been assessed as low. It is your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff.

# 10. What administrative information is relevant to this course?

## 10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Canvas, are electronically checked through Turnitin. This software allows for text comparisons to be made between your submitted assessment item and all other work to which Turnitin has access.

## 10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

The final mark is in the percentage range 47% to 49.4%
The course is graded using the Standard Grading scale
You have not failed an assessment task in the course due to academic misconduct

## 10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate:
- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

## 10.4. SafeUniSC

UniSC is committed to a culture of respect and providing a safe and supportive environment for all members of our community. For immediate assistance on campus contact SafeUniSC by phone: 07 5430 1168 or using the SafeZone app. For general enquires contact the SafeUniSC team by phone 07 5456 3864 or email safe@usc.edu.au.

The SafeUniSC Specialist Service is a Student Wellbeing service that provides free and confidential support to students who may have experienced or observed behaviour that could cause fear, offence or trauma. To contact the service call 07 5430 1226 or email studentwellbeing@usc.edu.au.

## 10.5. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

## 10.6. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

## 10.7. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

## 10.8. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Central Examinations
- Deferred Examinations
- Student Conduct
- Students with a Disability

For more information, visit https://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

## 10.9. Student Charter

UniSC is committed to excellence in teaching, research and engagement in an environment that is inclusive, inspiring, safe and respectful. The Student Charter sets out what students can expect from the University, and what in turn is expected of students, to achieve these outcomes.

## 10.10. General Enquiries

**In person:**

- **UniSC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **UniSC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **UniSC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **UniSC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **UniSC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **UniSC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

**Tel:** +61 7 5430 2890

**Email:** studentcentral@usc.edu.au