ZOOL13015 *Environmental Physiology of Animals*
Term 1 - 2021

Profile information current as at 29/04/2024 11:01 am

General Information

Overview

In Environmental Physiology of Animals, you will learn about the limits placed on organisms by their physiology in both aquatic and terrestrial habitats, how organisms respond to environmental challenges, and how organisms have evolved to and are adapted to their ecological niche. This unit will cover topics such as the central nervous system and sensory system design, metabolism, respiration and energy supply, locomotion and allometric scaling, stress and the effects of capture and release, conservation physiology and extreme habitats. There is a strong focus on experimental physiology and incorporating theory and hands-on experience into practical classes during the Residential School, where you will conduct your own experiments. A fundamental knowledge of statistical design and analyses is assumed.

Details

Career Level: *Undergraduate*
Unit Level: *Level 3*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

BIOL11100 or BIOL12112
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 - 2021

- Mixed Mode

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: 40%
2. **Presentation**
Weighting: 10%
3. **Practical Assessment**
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.

Unit Learning Outcomes

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

1. Examine the functioning and control of physiological systems in a range of animals and habitats
2. Apply knowledge of physiological responses of animals to a range of environmental challenges
3. Present, analyse and interpret physiological data
4. Design experiments and apply a range of practical skills relevant to the study of environmental physiology.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | ◦ Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes			
	1	2	3	4
1 - Online Quiz(zes) - 40%	•	•		
2 - Presentation - 10%	•	•	•	
3 - Practical Assessment - 50%			•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes			
	1	2	3	4
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) - 40%		•	•	•		•				
2 - Presentation - 10%	•	•	•	•	•	•				

Assessment Tasks	Graduate Attributes									
	1	2	3	4	5	6	7	8	9	10
3 - Practical Assessment - 50%	•	•			•			•		

Textbooks and Resources

Textbooks

ZOOL13015

Supplementary

Animal Physiology
Fourth Edition (2016)
Authors: Hill, Richard W., Wyse, Gordon A., Anderson, Margaret.
Sinauer Associates
Sunderland , Massachuse , USA
ISBN: 9781605354712
Binding: eBook
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Supplementary

ENVIRONMENTAL PHYSIOLOGY OF ANIMALS
Edition: 2nd ed. (2005)
Authors: Pat Willmer, Graham Stone, Ian Johnston.
Blackwell Science Publishing company
350 Main Street, Malden , MA 02148-5 , USA
ISBN: 9781405107242
Binding: eBook

Additional Textbook Information
Copies of both texts are held by the library. Free eBooks are available at https://www.academia.edu/.
If you prefer your copy, you can purchase one at the CQUni Bookshop here: http://bookshop.cqu.edu.au (search on the Uni code)

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

Schedule

Week 1 - 08 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Fundamentals of environmental physiology: Animals and environments.		

Week 2 - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Energy, Metabolism and Temperature.		

Week 3 - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Water and Salt Physiology.		Selection of research topic for residential school presentation.

Week 4 - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Sensory Processes and Systems.		

Week 5 - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Oxygen, carbon dioxide and internal transport: Diving by marine mammals.		

Vacation Week - 12 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic

Week 6 - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Residential school.		Fifteen (15) minute presentation of selected research topic. **Presentation** Due: Week 6 Wednesday (21 Apr 2021) 11:45 pm AEST

Week 7 - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Lecture free week: Residential school focus.		

Week 8 - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Genomics and related approaches in ecological physiology: The curious case of the loss of hemoglobin in Antarctic icefish.		

Week 9 - 10 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Electronic tagging technologies: Understanding the physiological and behavioural responses of animals.		

Week 10 - 17 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Extreme terrestrial habitats and adaptations: Deserts and high altitude.		

Week 11 - 24 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Extreme aquatic habitats and adaptations: Soda lakes, freezing oceans and the deep-sea.		

Week 12 - 31 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Unit recap and synthesis.		

Review/Exam Week - 07 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic
		ALL online Theory Quizzes close Monday 7th of June. Residential School manuscripts due Monday 7th of June. **Online quiz(zes)** Due: Review/Exam Week Monday (7 June 2021) 11:45 pm AEST **Residential School Experimental Reports** Due: Review/Exam Week Monday (7 June 2021) 11:45 pm AEST

Exam Week - 14 Jun 2021

Module/Topic	Chapter	Events and Submissions/Topic

Assessment Tasks

1 Online quiz(zes)

Assessment Type
Online Quiz(zes)

Task Description
These periodic quizzes are based on lecture and study material from previous weeks (please revise the lecture and reading material associated with the weeks covered by the quiz).
ALL online Theory Quizzes open the Monday following the topic(s) being covered (e.g. Theory Quiz A covering Weeks 2-3, opens Monday of Week 4).
ALL online Theory Quizzes will remain open until the 7th of June (Monday of Review Week).
Once a quiz is opened it must be completed within 30 minutes, if it is not submitted in the allocated 30 minutes the quiz will automatic self-submit.
Questions are a mix of 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 from your peers. You are asked that you 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
4

Frequency of Quizzes
Fortnightly

Assessment Due Date
Review/Exam Week Monday (7 June 2021) 11:45 pm AEST

Return Date to Students

On completion

Weighting
40%

Assessment Criteria
Questions are a mix of 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 from your peers.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Examine the functioning and control of physiological systems in a range of animals and habitats
- Apply knowledge of physiological responses of animals to a range of environmental challenges

Graduate Attributes

- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence

2 Presentation

Assessment Type
Presentation

Task Description
For this assessment you are to select and research an animal ecophysiology topic of your choice (this must approved by the unit coordinator). You will then present your research topic as a fifteen (15) minute presentation in front of your peers during the residential school in week 6. You must explain and highlight the evolution, functioning and adaptive value that the particular system conveys in the context of the animals environment.

Assessment Due Date
Week 6 Wednesday (21 Apr 2021) 11:45 pm AEST

Return Date to Students
Week 10 Monday (17 May 2021)

Weighting
10%

Assessment Criteria
Student presentations will be evaluated by the unit coordinator. Additional information regarding assessment requirements, suggestions, guidance and presentation format will be provided on the Moodle at the commencement of of term.

Referencing Style

- Harvard (author-date)

Submission
Offline

Submission Instructions
Face-to-face presentation during the residential school in week 6.

Learning Outcomes Assessed

- Examine the functioning and control of physiological systems in a range of animals and habitats
- Apply knowledge of physiological responses of animals to a range of environmental challenges
- Present, analyse and interpret physiological data

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Team Work
- Information Technology Competence

3 Residential School Experimental Reports

Assessment Type
Practical Assessment

Task Description
During the residential school you will undertake experimental activities that require the application of scientific knowledge, techniques and methodologies. Following the residential school, you will use the data collected during each experimental activity to construct a manuscript formatted for submission to the scientific journal Conservation Physiology. General assistance with the interpretation and analysis of data will be provided at the conclusion of each activity and more generally during the residential school.
Your manuscript will be assessed against the following criteria:
1. Abstract (clear, concise summary of context, hypothesis, results and conclusions).
2. Introduction (relevant context provided, clear well-articulated hypothesis).
3. Methods (adequate description and justification of methods and materials used so the experiment could be repeated).
4. Results (concise description of results, ordered logically, well presented data, graphs/tables, as well as basic statistical analyses).
5. Discussion (logical structure that discusses key results and their meaning, places results in a discipline specific context and identifies biases/improvements/further avenues of study).
6. References (cited appropriately in text and list, ten-fifteen minimum, no web pages unless of the data repository-type).
7. Spelling & grammar.
A comprehensive assessment rubric and manuscript formatting guidelines will be available at the commencement of term on the Moodle.

Assessment Due Date
Review/Exam Week Monday (7 June 2021) 11:45 pm AEST

Return Date to Students

Weighting
50%

Assessment Criteria
Student manuscripts will be evaluated against an assessment rubric that will be available at the beginning of the residential school.

Referencing Style

- Harvard (author-date)

Submission
Online

Learning Outcomes Assessed

- Present, analyse and interpret physiological data
- Design experiments and apply a range of practical skills relevant to the study of environmental physiology.

Graduate Attributes

- Communication
- Problem Solving
- Team Work
- Ethical practice

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