



ZOOL19002 *Australian Vertebrate Biology*

Term 2 - 2017

Profile information current as at 14/05/2024 08:35 pm

All details in this unit profile for ZOOL19002 have been officially approved by CQUUniversity 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.

General Information

Overview

In this unit, you will trace the evolutionary development of that very diverse group: the chordates; from those early non-vertebrate "fish" to the most modern apes (humans) through both the study of theory and the examination of biological material. Emphasis will be placed on the interrelated aspects of structure and function, but their ecology and diverse behaviours also will be studied, and all in the context of an evolving Earth.

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

Prerequisites: ZOOL11005 Foundation Animal Biology OR (BIOL11099 Living Systems AND BIOL11100 Functional Biology)

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 - 2017

- Distance
- 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: 25%

2. **Practical Assessment**

Weighting: 25%

3. **Examination**

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 Personal comments, emails, Moodle evaluation

Feedback

Numerous positive comments were received regarding unit structure, components, operation, and student support.

Recommendation

These elements will be maintained, and strengthened where possible in future offerings.

Feedback from Moodle evaluation

Feedback

Assignment return was too tardy.

Recommendation

I will improve this and other related course component aspects (e.g., task feedback) for next offering by better planning of submission dates and marking around residential schools and other commitments.

Feedback from Moodle evaluation

Feedback

One comment was received implying Moodle site layout could be improved, including the provision of lecture slides.

Recommendation

I will review the course Moodle site layout and improve it wherever possible, and i will explore the possibility of providing PowerPoint slides in addition to the Prezi lecture provided.

Unit Learning Outcomes

































































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

1. Comprehend the evolution of chordates
2. Comprehend the basic phylogenetic relationships of the major groups of vertebrates
3. Comprehend and analyse the adaptive changes that have occurred in aquatic vertebrates
4. Comprehend and analyse the changes in homologous structures which accompanied the invasion of terrestrial habitats by vertebrates
5. Recognise, describe, and point out the external and internal features that characterise the major groups of modern day vertebrates
6. Recognise and describe the basic microscopic anatomy of chordates
7. Relate and analyse a chordate's structural and functional features in relation to its habitat
8. Demonstrate the results of additional reading around the subject
9. Communicate knowledge and findings clearly both orally and in writing.






















Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes								
	1	2	3	4	5	6	7	8	9
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 - 25%										
2 - Practical Assessment - 25%										
3 - Examination - 50%										

Textbooks and Resources

Textbooks

ZOOL19002

Prescribed

Vertebrate Life

Edition: 9th (PIE) (2013)

Authors: Pough, FH, Janis, CM, & Heiser, JB

Pearson Education Inc (Benjamin Cummings)

San Francisco , California , USA

ISBN: ISBN 10: 0-321-778235-6; ISBN 13: 978-0-321-78235-9 (IE)

Binding: Paperback

Additional Textbook Information

Latest edition or recent edition is adequate.

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- A computer of adequate size and power, with sufficient hard drive and memory size and processing speed, large sound and video cards, plus adequate Internet access and connection reliability to facilitate significant uploads/downloads/video streaming and sustained lengthy connections (e.g., lecture video downloads, real time online tutorials) with microphone and speakers (built-in or external) OR microphone+speaker headset (cheap '\$20' set is adequate).
- A working mammalian brain complete with curiosity centre!
- Recent (not necessarily latest) computer software including Microsoft Word, Adobe Reader, Java or ability to download same and other required software to enable Blackboard Collaborate sessions (available free via unit Moodle site).

Referencing Style

All submissions for this unit must use the referencing style: [Harvard \(author-date\)](#)

For further information, see the Assessment Tasks.

Teaching Contacts

Bret Heath Unit Coordinator

b.heath@cqu.edu.au

Schedule

Week 1 - 10 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
How to be a chordate and a vertebrate, and why? (Foundations: brief review of evolutionary concepts as a basis for the unit. The origin of chordates, vertebrates and vertebrate organ systems.)	1,2	

Week 2 - 17 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
How to be bigger than an early chordate - and a fish which gets more food! (The jawless fishes and the origin of jawed vertebrates. The evolution of jawed vertebrates, with some emphasis on the radiation of the Chondrichthyes.)	3,4,5	

Week 3 - 24 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Being the best fish you can be! (Other basic features of fishes and the radiation of the bony fishes.)	6	

Week 4 - 31 Jul 2017

Module/Topic	Chapter	Events and Submissions/Topic
Getting out of the pool! (The origin of the tetrapods. Soft parts, environmental physiology, and behaviour of early 'primitive' tetrapods (using modern amphibians as a model).)	8, 9, 10	

Week 5 - 07 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
Life on the land, but living in a box. (The origins and radiation of amniotes. Early reptiles: anapsids, diapsids, and synapsids, and the characteristics of turtles.)	9, 11, 12	

Vacation Week - 14 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Week 6 - 21 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
A great time to be a lizard! (Geography and ecology of the Mesozoic, and the radiation of diapsid reptiles.)	15, 16	Residential school/combined block practicum begins this coming Sun 27 Aug 2017

Week 7 - 28 Aug 2017

Module/Topic	Chapter	Events and Submissions/Topic
A low cost life, and to have lizard legs, or not? (Living lepidosaurs: the tuatara and squamates, and non-passive ectothermy.)	13, 14	Residential school/combined block practical (Sun 27 - Wed 30 Aug 2017 inclusive), compulsory for all students, and including Assessment item 2: In-class practical test.

Week 8 - 04 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
Feathered lizards - to the trees! (The birds: origin, structure, and evolution.)	16, 17, 22	

Week 9 - 11 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Early land-fish get hairy!
(The evolution and basic features of mammals.)

18, 20-22

Scientific essay Due: Week 9 Friday
(15 Sept 2017) 11:45 pm AEST

Week 10 - 18 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
How to be a better mammal. (Modern mammals.)	20, 21	

Week 11 - 25 Sep 2017

Module/Topic	Chapter	Events and Submissions/Topic
The synapsid in the mirror. (The evolution of <i>Homo sapiens</i> and its consequences.)	24	

Week 12 - 02 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
No lectures - unless catch-up required - structured revision - pulling major themes together.		

Review/Exam Week - 09 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Exam Week - 16 Oct 2017

Module/Topic	Chapter	Events and Submissions/Topic
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Assessment Tasks

1 Scientific essay

Assessment Type

Written Assessment

Task Description

Assessment details for ALL students

Assessment item 1 - Scientific essay

Due date:	Friday ending Week 9 (15 Sept 2017)	ASSESSMENT
Weighting:	25%	1
Length:	~2 500 words	

This assignment is a scientific essay (of ~2 500 words) on a topic of your choice that is relevant directly to vertebrate zoology, that is, a topic with the major theme of evolution of a taxonomic group, or of some functional anatomy. You are advised to discuss your chosen essay topic by email with the lecturer **prior** to beginning your research to ensure its appropriateness and to gauge the ease of its completion to help you achieve maximum marks for your effort. Topics must have a component of significant scientific controversy/uncertainty, that is, there is significant scientific doubt or conjecture over current knowledge, and not all is known of the topic. This allows you the opportunity to meet all marking criteria successfully (namely, those involving critical thought). Topics discussed comprehensively within our unit materials, and those factually well established, will not be eligible. Access to scientific journal articles (primary sources) and relevant incorporation of their content are required for a successful assessment outcomes. Accepted essay format and clear concise scientific written expression is necessitated.

Assessment Due Date

Week 9 Friday (15 Sept 2017) 11:45 pm AEST

Return Date to Students

Nominally within three weeks of receipt by marker.

Weighting

25%

Minimum mark or grade

30% of total marks available for this activity.

Assessment Criteria

To pass this unit, a student must aggregate at least 50% of the total marks available in the unit, and score at least the minimum achievement levels set for each assessment item.

Students will be expected to source learning materials/research and read around topics in the unit, as personal need and interest dictates, using resources such as science journal and magazine publications, other texts, reputable web sites and so on, as part of CQUniversity's focus on lifelong learning and self-directed independent learning.

Essay assignment grading standards

Each criterion in the table below (adapted from Angelo, 1998) is assessed equally.

Please note a minimum achievement level is set for this assessment activity (i.e., you must equal or exceed this set minimum achievement level for you to be considered for a passing grade for this unit overall, irrespective of your achievement in other assessment components in this unit).

Grade	Standard
High Distinction (HD)	(1) Responds fully to assignment. (2) Topic has a direct and obvious relationship to chordate zoology: major theme of evolution of a taxonomic group, or of some functional anatomy. (3) Presents own synthesis of ideas involving rigorous critique and analysis and including analysis of opposing points of view. (4) Expresses viewpoint clearly and persuasively. (5) Begins and ends effectively. (6) Provides adequate supporting arguments, evidence, examples, and details. (7) Is well organised, sequenced, integrated, and unified. (8) Considerable breadth of reading evident with proportionately high dependence on primary sources, and low dependence on secondary and tertiary sources and the Internet. (9) Adequately and correctly acknowledges and documents sources. (10) Original text with no instances of plagiarism or weak paraphrasing. (11) Is free of errors in spelling, word choice, punctuation, grammar, and format. (12) Otherwise clearly follows guidelines in essay writing as set out in 'A Student's Guide to Writing Assignments' or other published tertiary level guides to writing about biology. (13) Maintains a level of excellence throughout, and shows originality and creativity in realising (1) through (13).
Distinction (D)	Realises (1) through (13) fully and completely, and demonstrates overall excellence, but shows little or no independent thought, critical analysis, originality, or creativity.
Credit (C)	Realises (1) through (13) adequately, and demonstrates overall competence but contains a few, relatively minor errors or flaws. A Credit essay might show great independent thought, critical analysis, originality, and creativity, but these qualities do not make up for poor or careless writing, or lack of adequate attention to detail. A Credit essay typically looks and reads like a next-to-final draft.
Pass (P)	Fails to realise some elements of (1) through (13) adequately, and contains several, relatively serious, errors or flaws, or many minor ones. A Pass essay typically looks and reads like an early draft.
Fail (F)	Fails to realise several elements of (1) through (13) adequately, and contains many serious errors or flaws, and usually many minor ones too. A Fail essay typically looks and reads like a very rough first draft or even a zero draft.

Referencing Style

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

Submission

Online

Submission Instructions

This essay assignment should be submitted on-line electronically only as a Microsoft Word (doc, docx) file, by the due date (unless approval for later submission is received via the online 'Assignment extension' system).

Learning Outcomes Assessed

- Comprehend the evolution of chordates
- Comprehend the basic phylogenetic relationships of the major groups of vertebrates
- Comprehend and analyse the adaptive changes that have occurred in aquatic vertebrates
- Comprehend and analyse the changes in homologous structures which accompanied the invasion of terrestrial habitats by vertebrates
- Recognise, describe, and point out the external and internal features that characterise the major groups of modern day vertebrates
- Recognise and describe the basic microscopic anatomy of chordates
- Relate and analyse a chordate's structural and functional features in relation to its habitat

- Demonstrate the results of additional reading around the subject
- Communicate knowledge and findings clearly both orally and in writing.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

2 In-class practical test

Assessment Type

Practical Assessment

Task Description

Assessment details for ALL students

Assessment item 2 - In-class practical test

Due date:	Last practical session of residential school (CBP)	ASSESSMENT
Weighting:	25%	2
Length:	Duration two (2) hours	

A two-hour, closed book, practical test will be held in the final practical laboratory session (final day) of our residential school (combined block practicum).

It will consist of short-answer questions, typically provided alongside a relevant specimen (microscopic slide, skeletal, fixed, and dissected animal material) that were provided for examination during your combined block practicum.

Final structure depends upon the specimens available for examination during your combined block practicum, and thus more information will be provided at that time.

The focus will be application of your knowledge to deduce features of specimens including, but not limited to, ancestral and derived characteristics, adaptations, anatomical structure and function, physiological function, diet, behaviours, and ecology.

Assessment Due Date

This in-class practical test will be held in the last practical session of the compulsory residential school (combined block practicum).

Return Date to Students

Nominally three weeks from submission date.

Weighting

25%

Minimum mark or grade

30% of total marks available for this activity.

Assessment Criteria

To pass this unit, a student must aggregate at least 50% of the total marks available in the unit, and score at least the minimum achievement levels set for each assessment item.

Note attendance of all students is required for our residential school (Combined Block Practicum) during which Assessment item 2 - In-class practical test will be undertaken.

This assessment activity will use criterion-based marking of factual accuracy of responses to test questions. Students will be awarded marks for the correct, well reasoned answers to the questions.

Please note a minimum achievement level is set for this assessment activity (i.e., you must equal or exceed this set minimum achievement level for you to be considered for a passing grade for this unit overall, irrespective of your achievement in other assessment components in this unit).

Referencing Style

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

Submission

Offline

Submission Instructions

Submission will be at the immediate end of the in-class practical test held during our residential school (combined block practicum): test booklets (provided at the time) will be collected from participating individuals at conclusion of the test.

Learning Outcomes Assessed

- Comprehend the evolution of chordates
- Comprehend the basic phylogenetic relationships of the major groups of vertebrates
- Comprehend and analyse the adaptive changes that have occurred in aquatic vertebrates
- Comprehend and analyse the changes in homologous structures which accompanied the invasion of terrestrial habitats by vertebrates
- Recognise, describe, and point out the external and internal features that characterise the major groups of modern day vertebrates
- Recognise and describe the basic microscopic anatomy of chordates
- Relate and analyse a chordate's structural and functional features in relation to its habitat
- Demonstrate the results of additional reading around the subject
- Communicate knowledge and findings clearly both orally and in writing.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Literacy
- Information Technology Competence
- Cross Cultural Competence
- Ethical practice

Examination

Outline

Complete an invigilated examination.

Date

During the examination period at a CQUniversity examination centre.

Weighting

50%

Length

120 minutes

Minimum mark or grade

50% of total marks available for this activity.

Exam Conditions

Closed Book.

Materials

No calculators permitted

Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).

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