

ANM103 Animal Form, Function and Evolution

School: School of Science, Technology and Engineering

2024 Semester 2

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

In this course you will learn the principles of evolution as relates to animal ecology. This course will introduce you to major concepts underlying the study of animal biology, including molecular and population genetics, selection, adaptation, physiology, and how these concepts among others contribute to our understanding of the diversity of animal life. You will learn about the history of experimental evolution, and design and perform your own experimental simulations in a laboratory context.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
BLENDED LEARNING			
Learning materials – Online learning materials. Videos of content. Optional online tutorials	2hrs	Week 1	13 times
Laboratory 1 – Fortnightly on-campus tutorials	2hrs	Week 3	5 times
Laboratory 2 – Fortnightly on-campus labs	2hrs	Week 2	6 times
Seminar – On campus seminar	1hr	Week 1	4 times

1.3. Course Topics

1. Learn the fundamentals of genetics (on molecular, organismal and population levels) as they relate to animal evolution;
1. Gain an understanding of evolutionary theory and its role in explaining animal diversity;
1. Compare various physiological and behavioural adaptations that have enabled different taxa to survive in a range of environments;
1. Perform experiments demonstrating processes of evolution and learn how to analyse them.

2. What level is this course?

100 Level (Introductory)

Engaging with discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Limited or no prerequisites. Normally, associated with the first full-time study year of an undergraduate program.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES	GRADUATE QUALITIES
On successful completion of this course, you should be able to...	Completing these tasks successfully will contribute to you becoming...
1 Demonstrate and apply knowledge in the discipline of comparative animal physiology	Knowledgeable Creative and critical thinker
2 Critically analyse and solve problems in physiology by collecting, accurately recording, interpreting, drawing conclusions from and presenting data, according to scientific conventions.	Creative and critical thinker
3 Research, organise, scientifically communicate and present information about comparative physiology in a creative and informative way.	Creative and critical thinker Empowered

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

Enrolled in Program SC012, SC107, ED112, UC103, SC201, SB303, SC301, SC320, SB301, SC319 or SA301

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

Not applicable

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

High School level science

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

From week 2 there are lab worksheets to hand in. By week 5 you will have handed in 4 of these, which will have been marked, so you know if you're on the right track.

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	1a	Practical / Laboratory Skills	Individual	20%	11 x 200 words	Throughout teaching period (refer to Format)	In Class
All	1b	Report	Individual	20%	1200 words	Week 13	Online Assignment Submission with plagiarism check
All	2	Artefact - Creative, and Written Piece	Group	30%	5 min narration 350 - 500 words	Week 10	Online Submission
All	3	Examination - Centrally Scheduled	Individual	30%	2 hr (1000 words)	Exam Period	Exam Venue

All - Assessment Task 1a: - Laboratory-activity worksheets

GOAL:	Demonstrate and apply knowledge of evolution and genetics activities performed in the scheduled laboratory classes.		
PRODUCT:	Practical / Laboratory Skills		
FORMAT:	You will individually complete twelve laboratory-activity worksheets during scheduled laboratory classes. Worksheets may include written responses to questions, scientific drawings, calculations, graphing and interpretation of experimental results.		
CRITERIA:	No.		Learning Outcome assessed
	1	Solve problems in zoology	1 2
	2	Communicate your understanding of theoretical concepts or your interpretation of experimental results in an accurate manner.	1 3
GENERIC SKILLS:	Problem solving, Applying technologies, Information literacy		

All - Assessment Task 1b: Laboratory Report

GOAL:	Synthesise and communicate one of the laboratory experiments the the format of a formal scientific report.		
PRODUCT:	Report		
FORMAT:	You will choose one (1) of the appropriate laboratory experiments done throughout the semester and write a scientific report (Title, Introduction, Methods, Results, Discussion, References) on that experiment and its results. You may use your own results or those of the combined class (provided to you).		
CRITERIA:	No.		Learning Outcome assessed
	1	You will be assessed on the accuracy and completeness of your background research on the topic, your interpretation of the results, synthesising those results with the wider literature and your communication/presentation of the whole experiment.	1 2 3
GENERIC SKILLS:	Communication, Problem solving, Organisation, Information literacy		

All - Assessment Task 2: Animal adaptation presentation

GOAL:	Compare and contrast the adaptations of two or more animals to a shared environmental challenge									
PRODUCT:	Artefact - Creative, and Written Piece									
FORMAT:	In groups of 2-3 students, you will produce a digital presentation comparing a behavioural or physiological adaptation for survival or reproduction between two animal groups that share a specific environmental challenge, e.g., salt-excretion methods in marine fish and sea turtles, or wings in butterflies and bats.. Suggested topics will be provided on Canvas and you will inform the Course Coordinator of your choice. You will produce a 5-minute movie (you can use software such as iMovie or Windows Movie maker) that is informative, interesting and scientifically based. A written copy of your referenced narration (approximately 350-500 words, Harvard style referencing) must be submitted to Turnitin on Canvas by the due date. The movie file will also be uploaded to Canvas. Further instructions and resource material will be supplied on Canvas.									
CRITERIA:	<table border="1"><thead><tr><th>No.</th><th></th><th>Learning Outcome assessed</th></tr></thead><tbody><tr><td>1</td><td>Research a scientific topic and understand the relevant content</td><td>2 3</td></tr><tr><td>2</td><td>Demonstrate and communicate your scientific understanding in a professional manner.</td><td>3</td></tr></tbody></table>	No.		Learning Outcome assessed	1	Research a scientific topic and understand the relevant content	2 3	2	Demonstrate and communicate your scientific understanding in a professional manner.	3
No.		Learning Outcome assessed								
1	Research a scientific topic and understand the relevant content	2 3								
2	Demonstrate and communicate your scientific understanding in a professional manner.	3								
GENERIC SKILLS:	Communication, Collaboration, Applying technologies, Information literacy									

All - Assessment Task 3: End-of-semester Examination

GOAL:	Complete a final examination testing knowledge and application of theory.						
PRODUCT:	Examination - Centrally Scheduled						
FORMAT:	The final exam is a comprehensive, two (2) hour final examination, consisting of multiple choice questions. The examination is closed book. Formative multiple choice style quizzes will be available on Canvas to help you to gauge your progress with your learning in the course and familiarise yourself with the level of expectation of content knowledge.						
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1	Demonstrate and communicate knowledge of evolutionary theory as relates to animal ecology.	1					
GENERIC SKILLS:	Problem solving, Information literacy						

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	Carl Zimmer	2013	The Tangled Bank	Any	Roberts & Company
Recommended	HICKMAN,Susan L. Keen,David J. Eisenhour,Allan Larson,Helen l'Anson	2020	Integrated Principles of Zoology 18e	18	McGraw-Hill

8.2. Specific requirements

You must wear a lab coat, enclosed shoes, and safety glasses during laboratory classes. You must either purchase and bring to lab classes a copy of the ANM103 laboratory manual, or alternatively print out the manual from Canvas. The lab manual is available for purchase from Mail and Print Services (MaPS). Some labs will utilize both student's own mobile devices, and/or on-site computers.

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also 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](tel:0754301168) or using the [SafeZone](#) app. For general enquires contact the SafeUniSC team by phone [07 5456 3864](tel:0754563864) 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](tel:0754301226) 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